Sandy
Word Processor

A word processing program for the Apple 2e and 2c Computers

By James Donald

WYTAND PTY. LIMITED 1983

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Warranty and Copyright

This manual and the accompanying disks are copyright. All rights are reserved.

This manual and the accompanying disks may not, in whole or part, be copied by any means whatsoever except for the personal use of an original purchaser.

Warranty

Wytand Pty. Limited warrants that this package is fit and merchantable for use as a word processor. The word processing program has been thoroughly tested and to the best of our knowledge is free from bugs. Should you discover any bugs study Chapter 15 "Troubleshooting" of this manual. If the bug persists please inform us (by mail) and you will receive a prompt and courteous fix. (Well, usually prompt.)

This package contains a number of database/mailing list management utilities. These are usable and satisfactory for most mailing list requirements. However we do not warrant the mailing list management utilities to be free from bugs, nor do we claim that this product is entirely satisfactory as a database. However we provide facilities for access to databases maintained by other programs and we recommend this if mailing list management is intended to be the major use of this word processor.

We also promise that the manual is faithful to the program in all important respects, except as stated in the text file "ERRATA AND NEW FEATURES".

Hardware Configuration

This section explains how to install SANDY on your system. Your dealer should have done this already, in which case skip this section.

To understand this section you need to have a basic knowledge of the computer. The rest of the manual can be used by someone who has never used a computer before.

This version of SANDY requires the following hardware as a minimum configuration:

Apple //e
Disk Drive and Controller Card
Video screen (Preferably High Resolution - the more readable your screen, the better.)

It is also highly desirable to have a printer (virtually any type will do) and an 80-column card. Currently the following 80-column cards are supported:

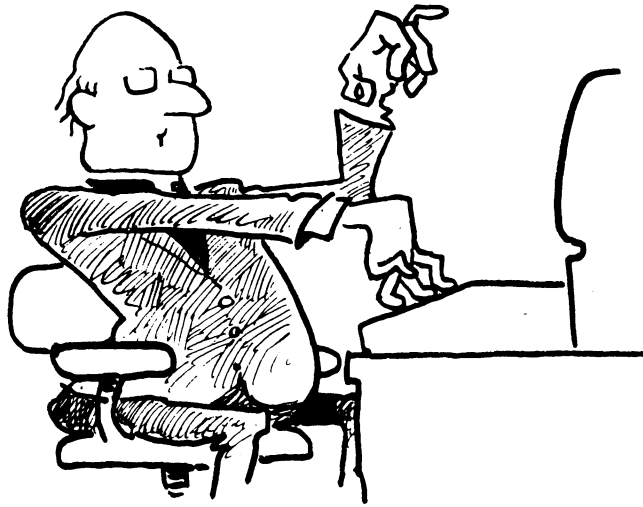
Apple //e 80 column card
Vision-80

Your SANDY program disk must be set up before you can use it, so that it can "see" exactly what hardware configuration you have. You dealer will probably do this. The procedure is as follows:

The first time you boot SANDY, a program called CONVERT will run automatically. The program will ask you what sort of display you have: normal Apple//e, Apple 80-column card, or Vision-80. It will then ask you to answer two questions concerning your printer. If you are unsure how to answer these questions, consult your dealer or answer the questions by pressing the return key (RETURN).

The default answer (given by pressing carriage return will be good enough for most purposes.

One of the questions that CONVERT asks you is: "Can your printer do a backspace?"



THE CONVERT PROCEDURE

If you tell SANDY that you printer can backspace it will use the accents, (such as the carat ^) as accents, i.e. it will put them on top of the following letter.

Now if you tell SANDY that your printer can backspace, and it cannot backspace (most dot matrix printers cannot backspace, most fully formed character printers can) then the result will be that when you print an accent the right justification will get mucked up because SANDY will think that the printer has backspaced when in fact it has not backspaced.

On the other hand if you tell SANDY that your printer cannot backspace when it can, no harm results. SANDY simply fails to use this feature.

If you ever get a new printer you might have to run this CONVERT program again. To do this, type **RUN CONVERT RETURN** from File Command Mode, with the SANDY disk in the drive, with the write-protect tab removed from the disk.

A Quick Equipment Check

This version of SANDY is for use only on an Apple //e computer. To check that you have the right equipment and that it is correctly set up for your SANDY, try this simple test:

1. Turn off your system.

2. Remove all disks from disk drives.

3. Turn on your system again. You should now see "Apple //e" displayed on your screen. Note that this should be in upper and lower case: if it is all in upper case then you do not have an Apple//e.

4. Press **Ctrl** and **Reset** together. The machine should answer with a "]", followed by a flashing block (the cursor).

5. Make sure your printer is switched on and is on-line, and type **PR#1**. Press **RETURN** and then type **The quick brown fox.**

6. Enter **RETURN** three or four more times

Your printer should now have printed the following:

```
]The quick brown fox

?SYNTAX ERROR
]
]
]
```

If nothing happens after you enter "PR#1" then either your printer is not switched on, or it is not connected to Slot 1. If it is in some other slot then start again, this time using the correct slot number. For example, if it is in Slot 2 then type PR#2 instead of PR#1.

If your printer prints exactly as above you are ready to continue. Otherwise you may have to tinker a little with your system. If unsure, your dealer might help.

List of Features

The most important feature of this word processor is that text can easily be edited without having to constantly change modes: there is no "move" mode, no "insert" mode, no "delete" mode. After an insertion or deletion there is no need to press the RETURN, or Carriage Return key (the "Enter" key), and it is not necessary to reformat the section of text that has been changed. This very simple and powerful editing makes SANDY ideal for composition work.

The cursor gradually speeds up when an arrow key or the [Del] key is held down, allowing a smoothly accelerating auto repeat function instead of an abrupt jump of the cursor.

You can move, delete, or undelete by character, word, line, or paragraph, all with a smoothly accelerating auto repeat.

The entire word processing program is contained within the memory of the computer, which means that the word processor disk need not be permanently kept in the disk drive. On a two-drive system both drives can be used for documents, and SANDY will easily run on a one-drive machine.

The formatting commands are simple and powerful.

Any text file, including spreadsheet print files and random access text files, can be inserted into a document. For example, a Visicalc display can be inserted into your text files.

Formatted text can be displayed on the screen.

Automatic suppression of "widows" and "orphans".

Any-sized block of text can be moved or copied.

It is easy to merge and dissect documents. Any document or any part of any document can be inserted into any place in any other document.

Very large files can be handled with the Scratch Disk facility. Many small files can be linked so as to print a larger document like a book.

You can enter all 128 ASCII characters, including all printer and escape codes, directly into text.

You can create a glossary of frequently used words, phrases, paragraphs, or documents. Any glossary item can be entered with three keystrokes.

You can set and clear tabs, and can tab and tab justify (decimal tab) for setting up tables.

You can search and replace, both globally and manually.

You have full hyphenation control - words marked for hyphenation will hyphenate only if required.

You can underline, (if the printer can do it.)

You can capitalize and uncapitalize by running your cursor over the text to be capitalized.

You can place non-printing comments in text.

You can place a "Stop printer" command in the text (usually immediately after a non printing comment) in order to, change print wheels at that point, or manually insert text.

You have a powerful form letter and label generator.

The manual has straightforward and complete tutorials, which are thoroughly user tested.

The manual is fully indexed.

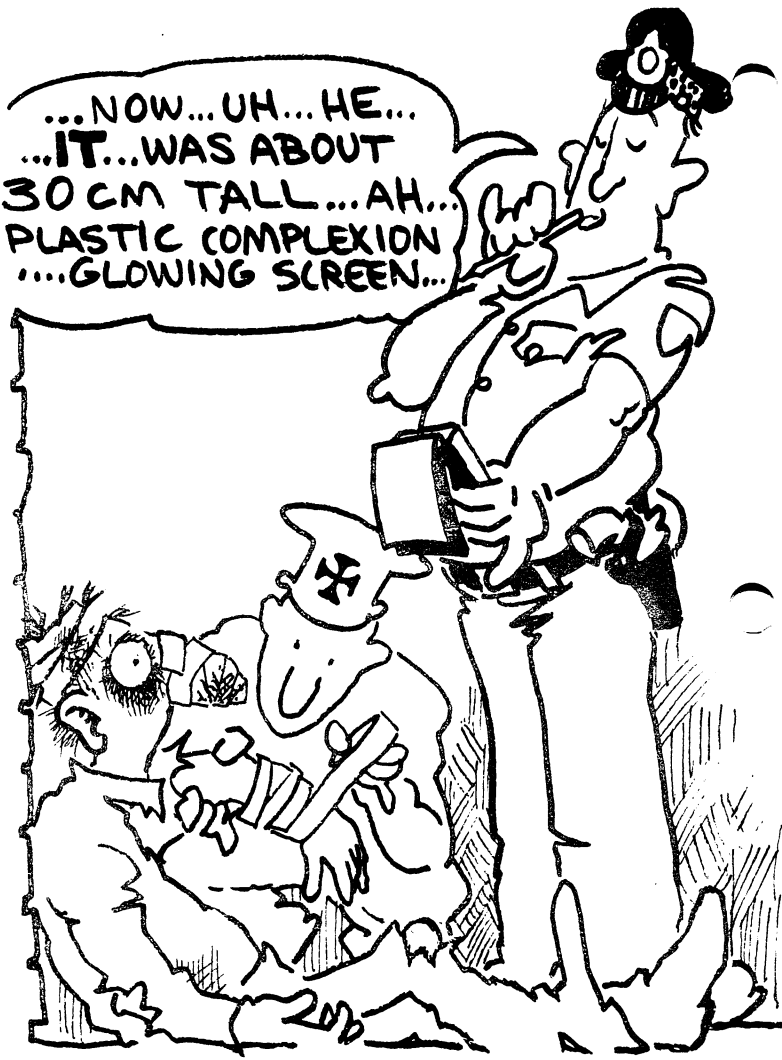
Carriage Returns (RETURNs) are treated as characters like any other. They can be inserted in the middle of a paragraph just like any other character, thus breaking a paragraph into two paragraphs. RETURNs can be deleted like any other character, thus merging two paragraphs.

Any string of characters, including one containing RETURNs, can be searched for or replaced.

Some or all occurrences of one string can be exchanged for another.

Large chunks of text can be deleted. If too much is deleted, it can be undeleted.

Negative paragraph indenting (block format) is supported.


...NOW...UH...HE...
...IT...WAS ABOUT
30 CM TALL...AH...
PLASTIC COMPLEXION
....GLOWING SCREEN...

Chapter one

How to use this Manual

You cannot learn how to use the word processor by reading this manual by itself. As always, the only way to learn is by *doing*.

This manual is designed both as a teaching manual and as a reference manual. There are tutorial and reference chapters. The Table of Contents lists the chapters, and the index will let you find items as you need them. The very first thing you must do (if it hasn't been done already) is to set up your computer, as explained in the small section "Hardware Configuration" at the beginning of this manual. This section explains the details of the CONVERT program, which allows you to tell the program exactly what sort of hardware configuration you have. You must get this exactly right, or strange things -- such as nothing at all -- may happen on your video screen or when you print things out. Don't worry though, this is usually only a one-time task. Once done, you are right until you either get another printer or another copy of SANDY. The set-up may have been done when you bought your SANDY. If you are unsure, consult your dealer.

Whatever happens when you are learning, don't worry. Short of physical violence, there is no real damage that you can do to the computer. The very worst that can happen is that you will lose the contents of the memory or the disk. If you lose the contents of memory you can get it back from the disk or type it in again; if you lose the contents of the disk you have to get the information or program back again from elsewhere. That's why you get

two copies of SANDY, in case one is accidentally spoiled. Replacements can be obtained for a small fee from your dealer or from Wytand Pty. Ltd. You can avoid damaging the contents of a disk by putting it away when you no longer need it.

Whenever something appears to be wrong, or if you don't know what to do at a certain point, don't be afraid to experiment or to try a different command. You won't damage anything and you will learn more about the program.

Once your disk is correctly set up, you are ready to begin. The next chapter, Chapter 2, is a short introduction to computers and computing terms. If you are familiar with the terminology you can skip this chapter and go on to Chapter 3.

Chapter 3 is a tutorial. It is designed for someone who has never used the program before, and even for someone who has never used a computer before. It will take you, step by step, through some of the more common procedures of SANDY. You will be introduced to enough commands to be able to change and edit documents, and to store them back on a disk.

This procedure is continued in Chapter 4. Here you will learn how to make your own documents and print them out. Once you can do this, you can use SANDY. More commands are introduced, and you will become quite confident in using the program.

Chapter 5 is the final tutorial session. It assumes you have already used SANDY enough to be comfortable with it. Here you will learn more about formatting documents, and some of the more advanced features will be introduced. You should now be confident enough to use the rest of the manual.

When you have finished the tutorials, you do not need to use the rest of the book in any particular order. The remaining chapters are reference chapters, but are written in such a way that you can read through them. We recommend that you do this, as they explain fully all the functions of SANDY, including some not mentioned in the tutorials.

Chapters 6,7,8 and 9 are reference Chapters, containing in a more direct form all of the information taught in the tutorial Chapters, and some less common additional commands. They are broken up into four Chapters because there are four basic command functions of SANDY. This makes the commands easy to find, and you will rarely have to use the index.

Chapter 10 explains the Glossary, a feature of SANDY that allows you to insert common words and phrases into your text with a few keystrokes.

Chapter 11 explains the functions of the Mail List and its related programs. These are small additional programs that come with SANDY to allow you to maintain mailing lists and so on. This chapter includes a section on sorting mailing lists, a very handy procedure for long or itemized lists.

Chapter 12 explains the uses of control codes, and how different printers can do different things. Some of the information is a little technical, but you should at least skim through it, as it has a few things everybody should know.

Chapter 13 explains some "slick tricks", advanced features of SANDY. These are not new commands, but ways to use the commands you know already to achieve some interesting and attractive effects. It also contains some of the more technical information about SANDY.

Chapter 14 is a brief description of how to back up, or copy disks. It is very important to make copies of your valuable files.

There follows a Chapter on troubleshooting. Turn to this when something goes wrong or something happens that you don't understand. It's almost certain that it has happened before to someone else, and advice is offered on how to get around most problems.

The manual ends with a short list of computer terms and their meanings, and the index. There is also a quick reference card that briefly explains most of the functions of the word processor. You will find that after you have used SANDY for a short time this reference card is all you will need. Eventually you will not even use this. Then you will be a true SANDY user.

If you use the manual this way, you should not have any trouble. Whenever you have difficulties, follow these steps:

1. Read the relevant section in the manual.

2. If that doesn't solve the problem, look at the index or Table of Contents to see if some other section of the manual is relevant. Also see Chapter 15, "Troubleshooting".

3. If that doesn't work, ensure that your computer is working correctly (printer turned on, etc.).

4. If you are still in trouble, call the SANDY hotline (the phone number is in the back of this manual), or the dealer who sold you SANDY.

Now read on.

Chapter Two

Introduction
to Computers and Word Processing

This chapter explains some of the key concepts of computers and word processors. The chapter will be helpful if you are a beginner, but if you feel comfortable with computers or have been using one for some time you can probably skip it.

What is a Word Processor?

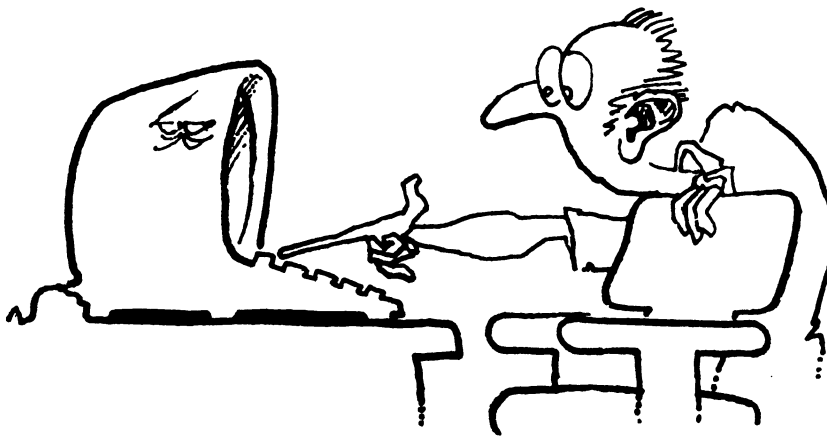
A Word Processor is a program which allows a computer to process words. It allows letters or words or sentences or whole paragraphs to be deleted, shuffled around and otherwise manipulated on a video screen. You can insert a paragraph within a page, or make up a letter out of a number of prewritten paragraphs. When the text reaches the stage where you are happy with it, it can be printed out in whatever format you determine. Multiple copies of letters can be produced, each one personalized and addressed differently. Text can be stored for retrieval at a later date, when it can be altered in whatever way is necessary. The days of retyping letters because of a small typographical error, or the journalist's dreaded "cut-and-paste", are gone.

If you are not familiar with the capabilities of a word processor, get a salesman to demonstrate this one to you. He will be glad to oblige. You will be amazed at the way the words jump around the screen at the operator's command, and how easy it can be to juggle pieces of text. Word Processors are the most important office innovation since the invention of the typewriter.

Some Basics for Beginners

A Word Processor is just a computer used in a certain way. If you understand computers, you understand Word Processors.

Your computer has a keyboard, so that you can "talk" to it, a screen so that it can "talk" back to you, and a printer to print things with. The computer also has a disk drive and programs, or "software". The disk drive is used to get the software into the machine. How? First you must be familiar with the concepts of ROM and RAM.



Most of the computer's memory is RAM (which stands for Random Access Memory). RAM is volatile, which means that every time the computer is switched off, and every time that a new program is loaded into the computer, it forgets everything that is in RAM.

Fortunately the computer has some permanent memory, called ROM (which stands for Read Only Memory). This memory really is permanent. It always remains exactly the way it was when the computer was manufactured. You cannot put anything new in ROM, so what the computer does is look at the disk in the disk drive for instructions on what to do.

A collection of instructions is called a program. If it is a Word Processing program it directs the computer to be a Word Processor. If it is a spreadsheet program (such as "Visicalc") it directs the computer to be a spreadsheet.

"Software" is the collective term for the programs and information that make the computer work. Without software a computer is useless, like a record player with no records or a camera with no film. It can do nothing. Software is called "soft" ware because it is not a physical object. It is information. This information is usually recorded on disks.

Information on a disk, be it programs, documents or whatever is usually stored in the form of "Files". A single floppy disk can contain many files. An official definition of a file is that it is the smallest unit of information addressable by name. When you are Word Processing you usually store one document or article in one file, so the file is, in effect, the document.

What is meant by "addressable by name"? It means that when you store a file on a disk you must give it a name, and when you retrieve it from disk you indicate the one you want by name.

Care and Use of Floppy Disks

A floppy disk looks like a cardboard square in a paper cover. The disk itself is inside the cardboard square. It is a circle of magnetic material, similar to a cassette tape. You can see the magnetic material through holes in the square. If you touch this magnetic material with your fingers or let it get dirty in any way the disk may not work reliably. So when you are not using your disks keep them in their paper covers. The paper cover shields the holes and generally protects the disk when it is not in use. The disk can be damaged by dirt, heat (for example inside a closed car on a hot day), by strong magnetic fields, or by bending, stapling, writing on with a hard pen or ballpoint, or by similar abuse.

Before a computer can use a disk, that disk must be initialized. When this is done the computer stores a pattern on the surface of the disk so that it can later find a given spot on the surface and write information there, or read the information back. It then puts aside a space on the disk for a catalog, so that it has somewhere to store the names of the files when they are created. Any information that was on the disk before it was initialized is destroyed. The entire disk is erased and emptied, so think carefully before initializing a disk. In particular do not initialize your SANDY program disk, or a data storage disk with half a dozen vital files on it.

To protect yourself against losing vital information you must make backups (copies) of important disks. There are several ways to do this: See chapter 14, "Copying Disks".

Chapter Three

First Tutorial

Elementary Editing

Now you are ready to start using SANDY. This chapter and the two following it are organized as tutorials. They assume no previous knowledge of computers, or of SANDY. The only assumption is that your computer and your SANDY disk are correctly set up (see the section "Hardware Configuration" at the beginning of the manual), and that you have at least one blank disk. The sessions are reasonably short, so try to do a whole chapter at a time. The tutorials are in point form. You will be briefly told what to do, followed by an explanation. If you are already familiar with computers or word processors you will be able to do the tutorials quite quickly. After you have completed this first tutorial chapter you will be able to use all the essential word processing functions.

Ready? In this session you will start up the word processor, transfer a letter from the program disk to a new disk of your own, and then make a few changes to it. Follow these steps:

Look at the Apple keyboard and locate the special keys. There are all the usual typewriter keys, but there are also several keys for special functions. The large long key at the bottom is called the "Spacebar". To either side of the spacebar there are two keys with small apples on them. The one on the left is called "Open Apple", and uses the symbol ◌̆ . The one on the right is called "Closed Apple",

and uses the symbol ◆ . Sometimes it doesn't matter which of these two keys you hold down, in which case this manual uses the symbol ◑ .

To the right of the Apple keys and the spacebar are four arrow keys. The four arrow symbols, ↑ , ↓ , ← , and → , are used to indicate these four keys. To the right and at the back of the keyboard is the "Delete" key, marked Del , and just under it the large key marked RETURN. That key is called the "Carriage Return" key, also known as "Enter" or just plain "Return". On the top left of the keyboard is the "Escape" key, marked Esc. Below that is the "Tab" key, marked →| . Below the Esc key is the "Control" key, marked Ctrl .

These are special keys that allow the Apple to perform many of its functions. They are not difficult to learn, because you will be using them regularly. Often you will be told to press two keys at once, a special key and an ordinary key. When you do this, depress the special key, then depress the ordinary key, then release them both. For example, when you are asked to press **Ctrl**C press the Ctrl key, leaving your finger on it while you press the **C** key. Keys that you have to hold down while pressing another key are: Ctrl , ◻ , and ◙ . They are a bit like the "Shift" key on a typewriter: they don't do anything by themselves, they modify other keys. On some occasions, when you have to enter a number of these dual functions one after the other, you can just hold down the relevant special key while you press the different keys with your other hand. For example, when you are asked to press:

◙↑ then ◙←

you would press the ◙ ("closed apple") key, then press the ↑ and the ← keys in succession, then release the ◙ key.

If you are a touch typist, you will notice small bumps on the D, K and ← keys, which will help you position your fingers by touch.

If at any time you get stuck during the tutorials press the RETURN key a few times. That will get you back to a familiar screen.

Take one of the two disks marked "SANDY WORD PROCESSOR".

This disk contains the SANDY program. You have two copies of it. They are identical. One is a spare. Put the spare one somewhere safe. Take the other one out of its jacket - its outer jacket, not the one with the label on it - and you will see a small notch about an inch from the top of the disk on the right hand side. If your SANDY disk has already been configured (see Hardware Configuration at the beginning of this manual) you now need to write protect it.

To write-protect your disk cover this notch with one of the small sticky labels that come with your blank disks. They are probably black or white or silver and they are called write-protect sticker. They stop the disk from being written to, just as a tape cassette has a little tab that you can break off after you've recorded, to prevent accidental erasure.

Put the SANDY disk into the disk drive and turn the computer on.

You may have more than one disk drive. If so, the SANDY disk goes in drive 1. If you are unsure which is which, Drive 1 is the one that spins around when you turn the machine on. The disk goes in with the SANDY label topmost and the label between your thumb and forefinger. Put it in, close the door, make sure your video monitor is turned on, and then turn the computer on at the switch at back. It does no harm to insert your disk while the drive is spinning (but NEVER remove a disk while the drive is spinning).

The disk will whirr for a few seconds, and then the following display, or one very similar to it, will appear.

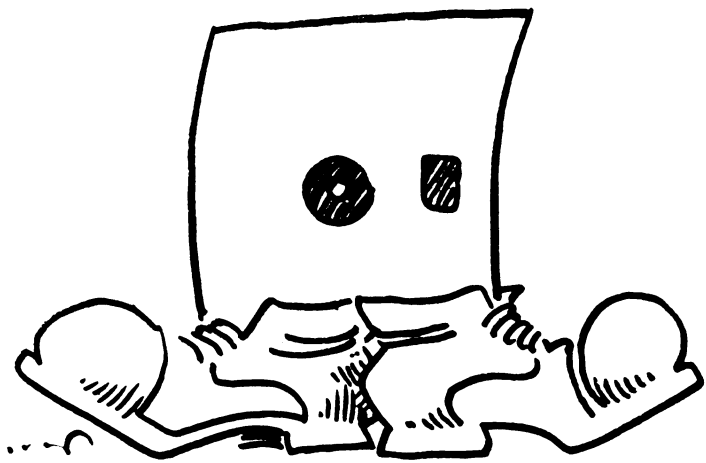
```
SANDY TEXT EDITOR
WORD PROCESSOR

Version 1.8 23 May 83
Serial number 3000

Copyright 1983
Wytand Pty. Ltd.

Slot and drive of scratch disk? S
[if only files of moderate size are
used specify zero - no scratch disk]
```

Type **0**. You will now see the following display:

```
FILE COMMAND?
LOAD, SAVE, PRINT, CATALOG, OR ANY
DOS COMMAND.

0 characters below cursor

0 characters above cursor

24335 characters free space
```

Remove the SANDY disk from the disk drive and replace it with a blank disk, which you should label "SANDY LEARNER".

What you have done so far is to put the SANDY program into the computer. This whole procedure is called "Booting" the disk. You have now "Booted" SANDY, and you don't need to boot it again until the next session. The blank disk that you placed in the drive is the disk you will use for your letters and documents - called "files" - while you are learning to use SANDY. You should label it - on the disk itself, not on the jacket - so you (and other people) will know what it contains. Your blank disks should have come with some large labels for this purpose. Write on the label **before** you put the label on the disk.



BOOTED DISC

Type **INIT SANDY LEARNER**, press **RETURN** key.

This "initializes" your blank disk. "INIT" is the command; "SANDY LEARNER" is what you are calling the disk. Initialization will take about a minute, and is necessary to get the blank disk ready to accept information. Initialization is also called "formatting".

CAUTION. Initialize a disk only the first time you use it. If you initialize a disk that has information on it all that information will be lost.

Initialization is only a one-time job. If you initialized your SANDY program disk, you would destroy the program and everything on the disk. You can't initialize a disk, or put any information on it, when it has a write-protect tab on it.

After the disk has finished initializing you will see a display with two horizontal bars to the left of the screen. This means you are in "Edit Mode". Normally the text that you intend to edit is between the two bars, but as yet you do not have any text.

Remove your data disk and put the SANDY disk back in the computer.

Press ◑F

Remember, ◑F means that you depress either the ○A (Open Apple) key or the ●A (Closed Apple) key, then while you are holding it down you press the F key.

You will now be back at your previous display. This is called "File Command Mode".

◑F will always get you from Edit Mode to File Command Mode.

Type C RETURN. (The C key, followed by the RETURN key). You will now see the following display:

```
A 011 CONVERT
A 035 MAILER
A 025 LABELLER
B 008 COPY
A 014 SORT MAIL LIST
A 022 POSTAL GROUP SORT

          Sandy
      Word Processor

      Copyright 1984
        Wytand Pty.
          Limited

A 003 SAMPLE
B 038 NEW FEATURES
C 005 GLOSSARY

A to C to select, space to continue.
```

This command, "C", will catalog the disk. Although the SANDY disk contains the word-processing program, it also contains a few data files. There are three on the screen at the moment, labelled A to C toward the bottom of the screen.

Type **A**

This selects document A, "SAMPLE". You can ignore all the other documents for now. You will now be back in File Command Mode, with some of the earlier display still on the screen.

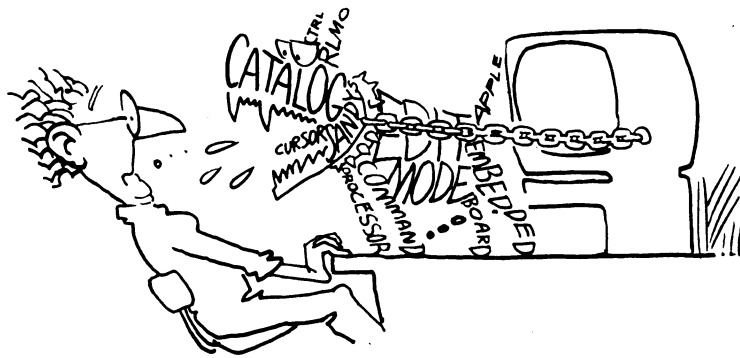
Type **L**

Just as "C" is short for "Catalog", so "L" is short for "LOAD". By typing L you are telling the computer to load the last file you mentioned. This file is "SAMPLE", which you selected on the previous screen. Notice that the file name, "SAMPLE" appears on the top of the screen after "LOAD".

Press **RETURN** (RETURN means carriage return - it does not mean that you type the word "return").

When you typed RETURN you told the program that the command is now complete. You have just commanded the program to load "SAMPLE" from the SANDY disk into the computer. It takes just a second or two. When it is finished the word processor will go back to Edit Mode. You will see the last few lines of a letter.

Press **CR**



◨R will move you to the beginning of the same letter. (Top of text.)

Type ◨F

You should now be back in File Command Mode.

Remove the SANDY disk and replace it with your SANDY LEARNER disk.

Now we have finished with the SANDY disk. You will not need it until you boot up again in the next chapter, so put it back in its protective sleeve and put it to one side.

Type **S RETURN** (Remember, press S, then press RETURN.)

This command saves the document called "SAMPLE" onto your data disk. You have just transferred a file from one disk (SANDY WORD PROCESSOR) to another disk (SANDY LEARNER). There are other more convenient ways to move files around, but we will look at them later.

Now you will see the last few lines of the letter you saw earlier. Press the "Up" arrow, ↑ , once or twice, and you will notice the text move down the screen. Press it again, but this time leave your finger on the key. After a moment the key will repeat and you will move to the top of the text. You will now see the top of the letter.

The ↑ key will move you up the screen. Actually, it will move the text down the screen, which amounts to the same thing. The flashing square on the screen, called the "Cursor", shows you exactly where in the text you are.

Now do the same with the "Down" arrow, ↓ . Press the ↑ and ↓ keys alternately, and notice how they move the cursor around the screen. They will always move you up or down, unless a RETURN intervenes, in which case they leave you on the RETURN.

The horizontal bars on the screen indicate the beginning and end of the text. They are always present in SANDY, and give you a clear indication of the bounds of your text.

Now use the Left and Right arrows, ← and →. They also move you around. Play with all four arrows for a while until you feel confident that you can move the cursor anywhere you want.

These four arrow keys are the main way to move around in SANDY. You will use them more than any other keys.

Position the cursor at the top of the text by holding the ↑ key down. Now press ◫**B** (by holding down either the ◫A or ◙A key, and the B key). Notice that this takes you to the end of your text, just like holding down the ↓ key.

The vertical arrow keys move the cursor forty or eighty characters (depending on your screen width) or to the next carriage return, whichever comes first. Thus every time you move up a line you move sideways by a small amount.

When you want to go to a particular word on the screen move upward or downward to the approximate height using the vertical arrow keys, then move sideways using the horizontal arrow keys. If you attempt to do it the other way around - moving sideways first then vertically - it will not work as expected. I repeat. Use the vertical arrow keys for gross movement, then use the horizontal arrow keys for fine movement. The same with deleting or undeleting.

◫B takes you to the bottom of your text. You can remember it by remembering "B" for Bottom.

Now press ◫**R**. This will take you to the top of text, just like holding down the ↑ key.

◫R is the opposite of ◑B. It will always take you to the top of your text. You can remember it by remembering "R" for Return to the top.

You might have noticed a spelling error in the document. Follow these instructions **exactly**: Move the cursor, by using the arrow keys, to the "v" in "retreive". "retreive" should be spelled "retrieve" (remember, "i before e except after c"). If you try to overtype "ie" on top of "ei", SANDY will automatically insert the extra characters, unlike a typewriter which types over of old information. What we must do is delete the wrong characters before inserting the correct characters.

When you are on the "v", press the [Del] key twice. This key deletes the previous character. After you have press it twice, "retreive" will read "retrve", with the cursor still over the "v". Now type in **ie**. You will now have the correct spelling.

You have just performed one of the most basic and important word processing functions, editing. You have edited out a spelling mistake. Now we will change "1st" to "first". Do you know how to do it?

Move the cursor to the "s" in "1st". Now press the [Del] key once. The "1" will disappear. Type **fir**. It will now spell "first".

We will now perform one last operation on the text, by adding a short paragraph to the end.

Position the cursor on the "c" at the beginning of the last word in the body of the letter, "commands". Use the → key to move the cursor to the right. Notice that after you come to the full stop (period), the cursor is over the RETURN symbol. This symbol (the carriage return) will probably be represented on your screen as a vertical bar "|". If you move one more character to the right, you move to the next line. This is because the symbol RETURN (Carriage Return) is a character, just like a "3" or an "**" or a " + ". When you move forward one character, you only move forward one "symbol".

You should now be on the line immediately below the main body of the text, two lines above "Yours,". Press **RETURN**. Notice that pressing this key puts a whole line between you and the main text.

If you press Del , it will cancel out your RETURN, because Del deletes just one character, such as a RETURN. Try it, then get back to where you were.

You are now an extra line below the main text. Type the following short paragraph. Type it in exactly as it appears, but do not worry about what happens when you get to the end of a line on the screen:

When I have finished this chapter I will have learnt many of the features of the SANDY word processor.

If you make any mistakes while typing, use the Del key to erase them. When you have finished, return the cursor to the top of the text using ◑R or repeated ↑ keys.

Easy enough? You have now performed another major task, inserting information into a document.

Make sure the cursor is at the beginning of the text. Now press ◑F to return to File Command Mode.

You are now back where you started, the difference being that you have altered the original "SAMPLE" file with all your changes. However, the original file on your disk is still the same as it was. You have changed only the file in memory.

Type **S** RETURN. ("S" for "SAVE"). This puts your changed document on your disk.

It is necessary to save the document once you have changed it. SANDY does not save automatically as you go, as the Wang Word Processor does, for example. Remember that there are essentially two documents, the one in the computer and the one on the disk. After you load a document from the disk and change it, these two documents are different until you save the one in memory. It then replaces any document bearing the current name.

CAUTION: It is important to remember that you save the document only from the position of the cursor to the bottom of the text, so if you want to save the whole document you must first position your cursor at the top of your file.

Creative Exercise

Make sure that your SANDY disk is write-protected. That is to say, make sure the notch on the left hand side is covered with a "write-protect sticker".

Enter File Command Mode with a ◑**F**, and catalog your SANDY program disk. To catalog, just type **C RETURN**. Select a file (not SAMPLE, some other file) from your SANDY disk, by typing the letter that appears next to it. Then load it, by typing **L RETURN**.

Move around the file with your arrow keys. Use all four arrow keys and the [Del] key. Insert a bit of text here and there in the file, and save that file onto your SANDY LEARNER disk under another name. Then again CATALOG your SANDY LEARNER disk.

Keep playing with these commands until you are confident that you can load, edit, and save any text file in any way that you please. Once you are confident that you can use these commands correctly, then try deliberately using them incorrectly, just to see what will happen. It is best to try this with your SANDY program disk safely put away where you can do no harm to it. It might be a good idea to also put your SANDY LEARNER disk out of harm's way and start a new disk, perhaps called "TRIAL AND ERROR".

If you do something and you are not sure how to get out of it, press the RETURN key and see what happens. Keep on playing until you are confident that you can freely and easily use the commands covered in this tutorial. When you have finished, turn off the computer.

End of the first lesson.

In this tutorial you have learnt how to load and save files, and how to move around text and make a few changes.

Review of Tutorial one

File Commands:

These commands can be entered only when you are in File Command Mode.

C (Catalog): Displays the names of all files on the disk.

INIT : Initializes a new data disk.

L (LOAD): Loads (fetches) a file from the disk.

S (SAVE): Saves the file in memory to the disk.

Edit commands:

↑ (up arrow): Moves the cursor up one screen line.

↓ (down arrow): Moves the cursor down one screen line.

→ (right arrow): Moves the cursor right one character.

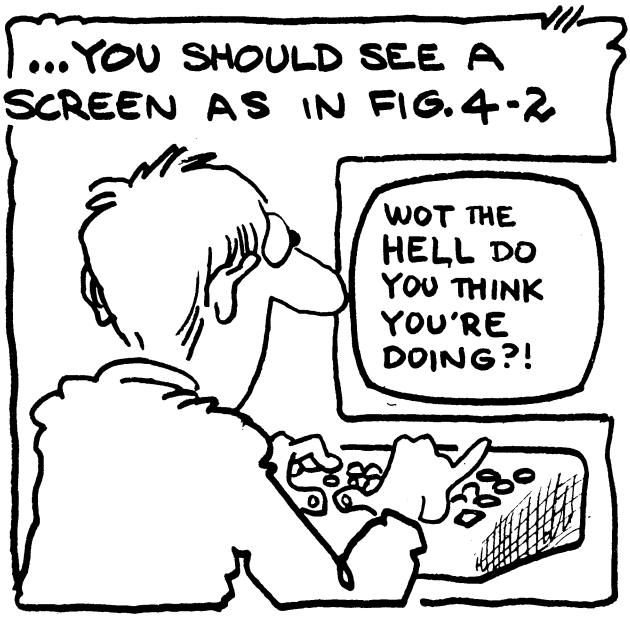
← (left arrow): Moves the cursor left one character.

Del : deletes the previous character.

◑**B**: Moves the cursor to the bottom of the text.

◑**R**: Moves the cursor to the top of text.

◑**F**: Takes you to File Command Mode from Edit Mode.


...YOU SHOULD SEE A SCREEN AS IN FIG. 4-2
WOT THE HELL DO YOU THINK YOU'RE DOING?!

Chapter Four

Second Tutorial

Editing and Printing

In this tutorial you will learn how to create a document, and how to print it out. You will also be introduced to a few more of the common SANDY commands.

Boot SANDY.

Remember how to boot SANDY? Just as you did in the last tutorial. Put the SANDY disk in the drive and turn on the computer. If the computer is already on you may be able to reboot by simply pressing the reset key at the back of the computer.

After booting press **0** or RETURN when you are asked "SLOT AND DRIVE OF SCRATCH DISK".

Remove your SANDY disk and replace it with the disk marked "SANDY LEARNER" which you created last session.

Catalog the disk.

After you booted the disk you are in File Command Mode. As you will remember, **C RETURN** catalogs the disk in the drive. RETURN means press the RETURN key. It does not mean type R E T U R N .

You will see two files on the disk. One is called "SANDY LEARNER". The other is called "SAMPLE", and has an "A" next to it. The letter next to the file indicates that it is a text file and can be accessed and edited by SANDY. "SAMPLE" is the file you transferred there in the last tutorial session. Now press **RETURN** to return to File Command Mode.

Press **RETURN** once more.

You are now in Edit Mode, but there is no file in the memory to edit. All you will see is the two horizontal bars that show the beginning and end of the text, and the flashing cursor between them.

Type the following letter just as it appears on the next page. Press RETURN **only** where indicated. Do not worry about line endings, SANDY will automatically take you to the next line when necessary, making the words "wrap around" so that they appear on one line. If you make any errors, use the DEL key, just as you did in the last session.

Do not attempt to add additional RETURNs and spaces to make the text look neat. We will worry about appearance when we get to printing.

Mr John Smith **RETURN**
13 Jones St. **RETURN**
Browntown, WA 6042 **RETURN**
RETURN
RETURN
RETURN
Dear Mr Smith, **RETURN**
RETURN
It has come to our notice that you have not paid your account in the last week. We cannot tolerate such tardiness. If you do not pay the amount owing [$3.56] in full within the next 24 hours, you will be visited by a large unshaven man carrying a violin case. I hope I make myself clear. **RETURN**
RETURN
Thank you for giving this matter your prompt attention. If we can be of any further assistance, please do not hesitate to call us. **RETURN**
RETURN
RETURN
Yours faithfully, **RETURN**
RETURN
RETURN
Lily White, **RETURN**
Managing Director **RETURN**

You have now created a complete letter. Notice how when the words wrap around, a number of dashes appear on the end of the previous line. This indicates an unused part of the line.

It is very easy to press the control key when you mean to press the shift key. This will usually result in a control character being entered into your text instead of a capital letter. If you are touch typing and not looking at the screen you may not see your mistake. Therefore SANDY makes an ackack sound whenever you type a control character (other than carriage return). This noise should lead you to look at the screen to see what is happening. Try it and see, then delete the unwanted control character.

When you have finished, move to the top of the text with ◑**R** command. Now return to File Command Mode by pressing ◑**F**.

You have created your own document. But at this stage it is only in the memory of the computer, not on the disk.

Press **S**. You will be presented with the prompt "SAVE". Now type **THREAT RETURN**. The letter will now be saved onto disk, under the name of "THREAT". As it is saving, the screen will display the size of the document, in this case about 545 characters. Do not worry if it is a little under or a little over this figure.

When you have finished saving you will notice that you are back in Edit Mode, at the bottom of the text. Move the cursor back to the top of file, and then move to File Command Mode.

◑**R** and ◑**F**, remember.

Press P

"P" stands for "Print", and is a File Command. "PRINT" will now appear on the screen.

Press **RETURN**. You will now see the following display:

PRIMARY PRINT OPTIONS	
LEFT MARGIN	10
INDENT	0
PAGE WIDTH [INCLUDING LEFT MARGIN]	70
RIGHT JUSTIFIED [Y/N]	Y
FOLD WIDTH [BOTTOM MARGIN]	7
FORM LENGTH	66
PAGE NUMBERS START AT	1
STOP EACH PAGE [Y/N]	N
LINE SPACING	1
PRINTER SLOT [SLOT ERROR FATAL]	1
PRINT [Y/N]	Y

These are the "Primary Print Options" They appear the first time you print in each session, and they can be changed. You will see that they have to do with the different ways you may print your document: the size of the page, etc. We will change one of them. Press the ↓ key until the cursor is positioned over "70" beside the "PAGE WIDTH". Type in **60 RETURN**.

This changes the page width to be printed from 70 to 60 characters across the page.

Turn on your printer and ensure that it is ready for printing.

"Ready for printing" means that the paper should be correctly loaded and the printer should be switched on and on-line. All printers are different. If you are not sure about yours, consult your printer manual or your dealer.

Press the spacebar

Pressing the spacebar from anywhere in the Primary Print Options menu will cause the document to print, with all the values currently on the screen. If your document does not print here, your printer is not correctly set up. Check that it is on, and that the paper is correctly inserted. It is also possible that you have answered the wrong "PRINTER SLOT". This is usually "1", but might be different. If in doubt ask somebody who knows.

After your document has printed, have a look at your printout.

The letter prints out in exactly the format you have chosen. It is right justified, i.e., the right hand side of the page is aligned the same as the left, to 60 characters in width.

If you look at the screen you will see that you are now back in edit mode. Using the arrow keys, move the cursor to the "n" in "notice" in the first line of the body of the letter. Now hold down the ♁ **A** key ("Open Apple"), and at the same time press the → key. Notice that instead of moving to the right, the arrow deletes the character to the right. Press it a number of times until the word "notice" disappears, and there is one space between "our" and "that". The cursor should now be over the first "t" in "that".

Now try ♁← delete left.

Do the same thing with the ← key, pressing it while holding down the ⌂ key. The preceding character is erased, just as it is when using the Del key. Do it a number of times until the words "It has come to our" disappear. The cursor should now be at the beginning of the line, still over the first "t" in "that".

You have now erased the first part of the sentence. We will replace it with something else.

Type **We have recently become aware** , ensuring that you type in a space after "aware". Watch the screen as you do it, and notice how the whole paragraph moves to make way for the new text. This is called "insertion". The sentence now makes sense again.

This is the basis of editing: inserting or being able to change bits of the letter around to suit yourself.

Move the cursor down to the end of the body of the letter, to the RETURN just after "us". Press ⌂↑. A large piece of the paragraph above you will disappear.

Used in conjunction with the ⌂A key, the four arrow keys will delete a character or a line. They will delete all the text between the cursor and where the place where the arrow alone would have moved you. This is a much quicker way of deleting text than using the Del key.

Now delete the rest of the last paragraph, using ⌂↑ a few times.

You do not have to worry about deleting too much, as the ⌂↑ command will delete only to the previous RETURN. The same is true of the ⌂↓ command: no matter how far it is from the next RETURN, it will delete only as far as that RETURN.

Press ⌘↓ to delete the extra RETURNs. Ensure that there are only two blank lines between "clear." and "Yours faithfully,".

Move the cursor to the RETURN below the "D" in "Dear Mr. Smith". Type in **.INDENT 4 RETURN**. This is called an "Embedded Print Command". It will not print out when you print the letter, but will cause the first line of every paragraph to be indented by four characters. Indenting is a common word processing procedure. Putting in a command like this means that you do not need to type spaces at the beginning of every paragraph.

Move the cursor to the top of text and press ⌘**P**.

This will do a "Test Print" to the screen.

You will now see the display:
PRINT OPTIONS Y/N

Press **RETURN**, which will accept the default value "N" for "No".

You had the option of displaying, and then changing, the Primary Print Options.

You will now see the display:
LEFT EDGE OF SCREEN AT COLUMN 10

Press **RETURN**, which will accept the default value of 10.

This means that the first character you see on the left edge of the screen is the one that will print in column 10 on your printer. Since you have said (in the Primary Print Options) that the left margin of your page will be "10", this is probably what you want.

The RETURN completes the ◻**P** command and causes a test print to the screen. If you have a 40-column screen, you will see dots in the middle of the page, but still see the ends of each line. Notice that the ".INDENT 4" does not appear.

If the ".INDENT 4" does appear onscreen, you have not typed it correctly. If that is the case, press ◻**R** to return to Edit Mode and check it, remembering that the full stop must be the very first character on the line and that the "4" must be followed by a RETURN. Then go to top of file and type ◻**PRETURN RETURN** again. If the .INDENT 4 still appears on the screen, you have still entered it incorrectly. Double-check that you have left no space before the "." at the start of the command, that you have spelt "INDENT" correctly, and that there is nothing else on that line other than the RETURN after the "4". You will need to keep doing it until you get it right and the ".INDENT 4" does not appear when you do a test print.

Press the spacebar, and the end of the letter will appear. Notice that "Yours faithfully," and "Lily White," are also indented. Press **R**.

"R" will return you to Edit Mode from wherever you are in your test print, allowing you to make changes when you see they are necessary.

Move the cursor to the RETURN above "Yours faithfully,". Type **.INDENT 0 RETURN**. This will cancel the earlier ".INDENT 4", setting the indent back to 0.

Make sure you have typed it correctly. The preceding character should be a RETURN, then there should be a full stop, the "INDENT 0", then a RETURN. Make sure you press "0" (zero) and not "O" (the letter between "N" and "P"). We will now type another Embedded Print Command.

Move the cursor to the RETURN above "Dear Mr. Smith". Type:
.CENTER RETURN
FIRST AND FINAL NOTICE RETURN

".CENTRE" is another Embedded Print Command. It will centre the next paragraph and the next paragraph only, placing it in the middle of the page, allowing for whatever width you set. In this case, "FIRST AND FINAL NOTICE" should print in the middle of the page. Let's check that it does.

Go to the top of the text and do a test print with **P RETURN RETURN**. Notice that "FIRST AND FINAL NOTICE" will now print in the centre of the page, but that the address and the "Dear Mr Smith," are indented. Repeat the test print one more time, by returning to Edit Mode with an **R** and typing **R P RETURN RETURN**

Now everything should appear how you want it, with just the beginnings of the paragraphs indented.

In the first test print you did just now, the ".INDENT 4" was still in operation, as you had not done a print since it was set. It was not until you did your second test print that the ".INDENT 0" command began to take effect. Whatever value is set for any print option, either in the Primary Print Options or by an Embedded Print Command, it will remain in force until a change is printed or test printed.

Press **R** to return to Edit Mode. Now prepare to print the document. Return to the top of text, then go to File Command Mode and type **P RETURN**.

This time you should not see the Primary Print Options, but another menu, the "Secondary Print Options" menu:

```
        FILE COMMAND? PRINT

        133 CHARACTERS

1       PRINTER MANUALLY POSITIONED
        TO START OF NEXT PAGE
2       SKIP TO NEXT PAGE
3       CONTINUE PRINTING WHERE
        LEFT OFF
4       OPTIONS
5       RETURN TO EDIT MODE
6       MULTIPLE COPIES
7       PRINT TO DISK.
        ANSWER 1, 2, 3, 4, 5, 6 OR 7
```

You can return to your Primary Print Options menu by pressing 4, but if you don't want to change them you needn't. This Secondary Print Option menu will appear each time you print now, until you reboot.

Ensure your printer is ready to print (paper loaded, switched on, on-line) and press **1**.

This selects the value for "PRINTER MANUALLY POSITIONED TO START OF NEXT PAGE", which you did when you positioned the paper in the printer just now.

Your amended text should now print. It should read as follows:

Mr. John Smith
13 Jones St.
Browntown, WA 6042

FIRST AND FINAL NOTICE

Dear Mr. Smith,

We have recently become aware that you have not paid your account in the last week. We cannot tolerate such tardiness. If you do not pay the amount owing [$3.56] in full within the next 24 hours, you will be visited by a large unshaven man carrying a violin case. I hope I make myself clear.

Yours faithfully,

Lily White,
Managing Director

When the printing is finished return to the top of the text and to File Command Mode. Press **S** to save the document. Notice that the filename "THREAT" appears, the name you originally called the letter. But we now have two letters, the original one and the amended one. Type **THREAT2 RETURN**. This will tell SANDY to save the second version under a different name.

If we had pressed RETURN after our "S" (for "Save") command, SANDY would have saved the file, but called it "THREAT", erasing the earlier version.

When the file has been saved, return to File Command Mode and type **C** RETURN. The disk will catalog, displaying the three text files "SAMPLE", "THREAT" and "THREAT2".

RETURN to return to File Command Mode. Now type **DELETE THREAT RETURN**. This will delete the file called "THREAT" from the disk, and leave you back in Edit Mode.

Press ◑**F** to return to File Command Mode, then **C RETURN** to catalog the disk and verify that "THREAT" has gone.

Return to File Command Mode with a **RETURN**. Now type **RENAME THREAT2, THREAT3**. Don't forget the comma.

This will rename the file called "THREAT2", and call it "THREAT3". Catalog the disk to see that this is the case. You can rename files any time you like from File Command Mode. You could even have renamed it "THREAT", the same as your original file. Never try to give two files on a disk the same name, or you might overwrite (erase) one of them.

Return to File Command Mode. Press **L**, to load a file. You will see the filename "THREAT2" appear, the most recent one you used. If you want to load a different file, just type in the name of that file over the top of "THREAT3". Do it now: type **SAMPLE**. This will load the file called "SAMPLE" which we played with in the first tutorial. This is the usual way to load files, as long as you know the name of the file you wish to load. If you don't, you'll have to catalog the disk first.

Creative Exercise

Before you go on to the next tutorial experiment a little, as you did at the end of the first tutorial. Create and print your own letters, using all the commands you learnt in this tutorial. Try changing some of the Primary Print Options to see what effect they have on your printing. Before going on to the next tutorial you should feel confident with all the commands you learnt in this session.

In short, before you set out to learn additional information, you should be confident that you can use this word processor as a word processor.

End of second lesson

In this tutorial you have learnt how to create documents of your own, save them, edit them and print them. You have learnt more edit and file commands and how to do a test print to the screen. You can now use SANDY for your everyday work. There is more to learn, but you have learnt the basics.

Review of Tutorial two

File Commands

P (PRINT): Prints your document. The first time each session you that use it, it will put you in the Primary Print Options menu, after that it will put you in the Secondary Print Options menu.

DELETE: Deletes a file from disk.

RENAME: Renames a disk file

Edit Commands:

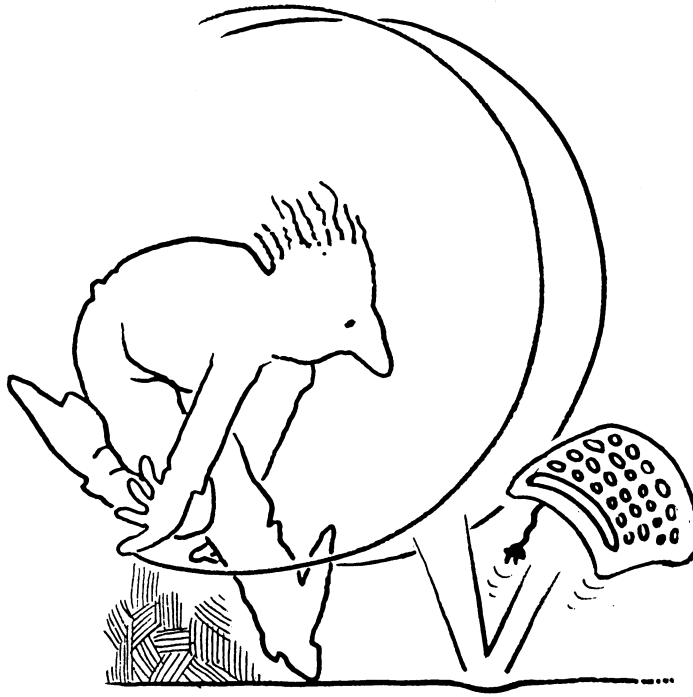
◌ (Open Apple): Used in conjunction with the four arrow keys, deletes text left and right, up and down.

◌ **P**: Does a test print to the screen.

Embedded Print Commands:

.INDENT x : Indents each paragraph "x" characters.

.CENTRE
or
.CENTER
Centers the next paragraph



KEYBOARD SHOULD NOT BOUNCE

Chapter Five

Third Tutorial

Advanced Editing

In this tutorial we will follow a different procedure from that followed in the first two. Rather than go step by step through every phase of an operation we will look at a few broader aspects of SANDY. You should feel at ease with the commands learnt in the first two tutorials before doing this tutorial. Specifically, you should know how to load and save documents, how to move easily to any part of your text, and how to delete text back and forward and up and down. You should also feel comfortable with creating new text files and printing out documents, both to the screen and to a printer.

If you do not feel confident in any of these things, it's a good idea to practice a bit more, even re-doing the first two tutorials again. Practice makes perfect.

Embedded Print Commands

You have already learnt some embedded print commands. These commands are used by SANDY chiefly for formatting text.

Boot the SANDY program disk, then remove it from the disk drive and put it back in upside down. This is called the "reverse" side of the SANDY disk.

LOAD the file called "EMBED" from the reverse side of your SANDY program disk. Clear any text you currently have in memory.

Print this file out with a printer, and compare it to the file on the screen. You can then easily see the result of different embedded print commands. You really only need a few for most formatting jobs. By incorporating embedded print commands into a glossary (see below) they become very easy to type.

Change the values of some of the embedded print commands in the file and print it out again. Notice the different results the changed values give. Experiment as much as you like.

Chapter 8 of this manual explains all the uses of embedded print commands. You do not need to read it now, unless you want to.

The important thing to remember when using embedded print commands is that most of them override and change the Primary Print Options. It will probably take a little experimentation to get them to work properly together, but practice makes perfect.

The Glossary

The glossary feature of SANDY allows you to keep a number of commonly used wordS, phrases, paragraphs, or documents permanently in the computer's memory, so that you can easily recall them and use them without having to type in the whole phrase.

Boot SANDY and enter edit mode. Press **RETURN** to begin creating a new file of your own. **Q** An inverse "(Q)" will appear on the screen.

Press **D**. The phrase "Dear Sir" will appear, followed by two RETURNs (carriage returns). You have just entered glossary item "D", from a glossary that was loaded into the computer when you booted SANDY.

Type this short sentence: **Welcome to the Glossary tutorial.** . Remember the full stop, followed by a space, at the end of the sentence.

Type **Q A** Two more sentences will be added. These two sentences are glossary Item "A".

Experiment with other glossary items. Try **Q E** or **Q I** or **Q Z**. Notice that there is no item "Z".

Return to file command mode and load the file called "GLOSSARY" into memory, deleting the text you have just created.

Look at this file. It contains the phrases and embedded print commands you used above. Notice that every item is preceded by a single character contained within curly brackets, followed by the opening curly bracket "{". You will also notice that each item is followed by the closing curly bracket "}". The file looks like this:

```
{/}{ \ }
{?}{|}
{'}{ ~ }
{'}{ ~ }
{A}{This is part of a demonstration of the
Glossar}. You can fit a lot into one item, more
than this paragraph.}
{C}{.CENTRE
}
{D}{Dear Sir

}
{E}{.EJECT
}
{I}{.INDENT }
{L}{.LEFT MARGIN }
{N}{.NEEDS }
{O}{.NOINDENT
}
{P}{.PAGE WIDTH }
{R}{.RELATIVE LEFT MARGIN }
{S}{.SPACE }
{X}{Merry Christmas}
{Y}{Yours faithfully,


}
```

Many of the glossary items are embedded print commands. This is because it is much easier to type ◨Q **R 20** than **.RELATIVE LEFT MARGIN 20**, for example.

Other items are special characters that may not be available on some keyboards.

We will now add a glossary item. Move your cursor to the end of file and type {**Z**}{, followed by your name and address. Then type } **RETURN**. The bottom of the glossary file should now look something like this:

{X}{Merry Christmas}RETURN
{Y}{Yours faithfully, RETURN
RETURN
}RETURN
{Z}{John Smith RETURN
37 Leonard St. RETURN
Parramatta} RETURN

Now move the cursor to the top of the file. Place your SANDY LEARNER disk into the drive.

Enter file command mode and save the changed file back onto the SANDY LEARNER disk under the name "GLOSSARY". You will be left in edit mode.

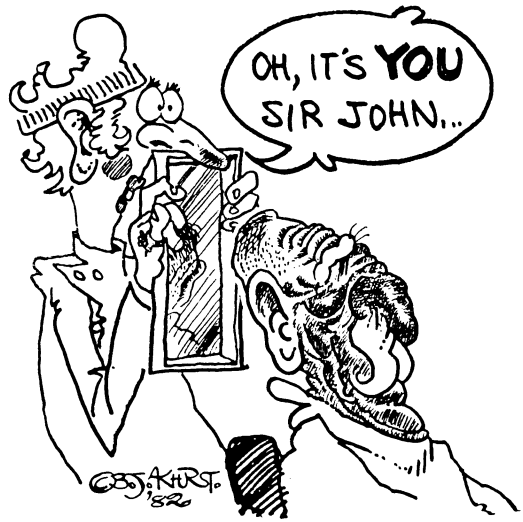
Re-enter file command mode. Press **G**. The prompt "GLOSSARY" will appear on the screen. Press **RETURN**. This tells SANDY to replace its present glossary with the file called GLOSSARY.

After the file has finished loading, you will be in edit mode again. Press ◨ **Q Z**. Your name should appear on the screen. If it does not, examine the glossary once again..

In this way you can change glossary items, and the currently used glossary. If you want the file with your address in it to be loaded in automatically when you boot SANDY, transfer the changed "GLOSSARY" file to your SANDY program disk.

This same technique can be used to set up form letters or legal documents. There is no limit to the size of a glossary item except that the glossary may not exceed about 5000 characters. You can, however, have several different disks with a different glossary on each disk.

The use of the glossary function is explained in Chapter 10.



SHORT CIRCUIT

Moving, Copying, Searching and Exchanging

SANDY has more edit Commands. These commands make some of the things you are doing already a little easier or quicker.

Load the file called **SAMP** from the reverse side of your SANDY program disk, deleting any text you currently have in memory.

Have a quick look at the file. Apart from its meaningless contents, it is just a normal text file.

Moving and Copying

Move the cursor to the full stop after "time" at the end of the first sentence of the last paragraph. Then press ◨G·A reverse "G(" will appear on the screen. Now move the cursor to the full stop after the "l" in "cockerel" at the end of the next sentence. Press ◨G again and the sentence "The doggerel ate the cockerel." will disappear.

You have "grabbed" the sentence with the ◑G You can grab any sized item you want, up to about two screens.

Press ◨ G again. The sentence you "grabbed" will reappear. Press ◑ G twice. The sentence will be repeated. You can move this sentence anywhere in the file you want.

The sentence you grabbed reappeared because by pressing ◨G twice you really tried to grab nothing. It is absurd to grab nothing, so in this case SANDY makes the last grabbed phrase reappear.

You usually use the "grab" command in groups of three to move text, and in groups of five to copy text. First you mark the beginning of what you want to grab, then the end, then where you want it moved to.

Move the cursor anywhere you want in the text, preferably to another full stop. Press ◑G twice. The sentence you grabbed will appear again.

The sentence appears yet again, and it will keep doing so until you grab a different piece of text. You can use this feature of SANDY to insert the same piece of text at a number of different places if you have a repetitive job.

If you were moving a group of paragraphs you would place the cursor on the RETURN before the first paragraph, then press ◑ G, then place the cursor on the RETURN after the last paragraph, and press ◑ G again, thus grabbing the group. Then you would place the cursor on a carriage return at the destination, and press ◑ G a third time. The paragraphs would then reappear at their destination.

Similarly if you are moving a full sentence, do your grabs on the full stop immediately before the sentence and the full stop immediately after the sentence, and then move the cursor to a full stop where you want the sentence to go.

Similarly when moving words or groups of words place the cursor on the space between the words. This will ensure that the correct spacing between words is consistently maintained.

Experiment with grabbing until you feel confident in using it.

You can use the grab function to copy pieces of text without moving the original.

To use this command to make a copy rather than a move you grab the text you want to move, press ◑G third time to restore the grabbed text, then move the cursor to the place where you wanted to insert the copy, then press ◑G twice. Try it.

Searching

Move the cursor to the top of the text with an ◑ **R**. Press ◑ **S**. An inverse "S(" will appear on the screen. Type in **pear** ◑ **S**.

The "S" stands for "Search".

The cursor will now move to the end of the first occurrence of the word "pear" in the second paragraph.

In this way you can move to a spot in the text just by specifying what you want to find.

Press ◑ **S** twice in succession. You will move to the end of the next "pear".

By pressing ◑ **S** twice you were trying to search for nothing. You cannot search for nothing, so SANDY finds the next occurrence of "pear", the last designated search string. A "string" is any group of characters.

Search and Exchange

Press ◑ **X**. An inverse "X(" will appear on the screen. Now type **peach** ◑ **X**. This command tells SANDY to exchange one string for another, in this case "peach" for "pear".

The string to be exchanged is always the most recent one that was searched for.

The cursor will move to the next "pear". Press **Y** for "Yes". The "pear" will change to "peach", and the cursor will move to the next "pear".

Press **N** for "No". The "pear" will remain and the cursor will move to the next one.

Press **CTRL Y**. (Hold down the **CTRL** key and press the Y key). All the remaining "pears" will become "peaches".

Keep the text in memory for the next session, "Undelete".

Undelete

As well as deleting, SANDY usually allows you to "undelete" text. This can be handy if you've made a mistake and have accidentally erased something you didn't mean to.

Move your cursor to the end of SAMP. The last paragraph is nonsense, as you can see. Delete some of the paragraph with the [Del] key, and some with ◙← and ◙↑.

After you have deleted most of the paragraph, enter ◙→. (Hold down the "Closed Apple" key while pressing the → key). Do it a couple of times, and you will notice the deleted text begin to reappear. You can also use ◙↓ . If you undelete beyond the text you deleted, you may find that rubbish will appear, in which case you can delete the unwanted text. Depending on what you have been doing recently all sorts of things can appear if you try to undelete more than you have deleted.

Leave the text as it originally was for the next session, "All Mode". Don't worry too much what the last paragraph looks like.

Undeleting can be very handy. You can also undelete backwards when you have deleted forwards. You should always undelete in the opposite direction to which you have deleted. You do not have to do it immediately after you have deleted something, but if you have moved the cursor around a lot since you deleted the text that you want restored you may find that it will not always work properly.

Screen Modes

SANDY has available three special screen modes that let you perform a few advanced functions. The first of these is "word/paragraph" mode.

If you do not have the **SAMP** file in memory, load it in from the reverse side of your SANDY disk.

With the cursor at the bottom of the text, press ◨**W**. Notice that the cursor now appears as a flashing "W". It will stay like this whenever you are in word/paragraph mode.

Press the ← key. Notice that instead of moving back one character, you move back one word. Try all four arrow keys. After a little experimentation you will notice that the left and right arrows move you by whole words, and that up and down arrows move you by whole paragraphs.

Practice moving to any spot you want in the text. Press the spacebar and you will be back in normal edit mode. Press ◨**W** again and you will be back in word/paragraph mode.

Go to the end of text with the down arrow key, while still in word/paragraph mode. Press [Del]. Notice that only the previous character disappears. Now press ◌←. The previous word will disappear. [Del] still works as it does in normal edit mode, but the ← key works on whole words.

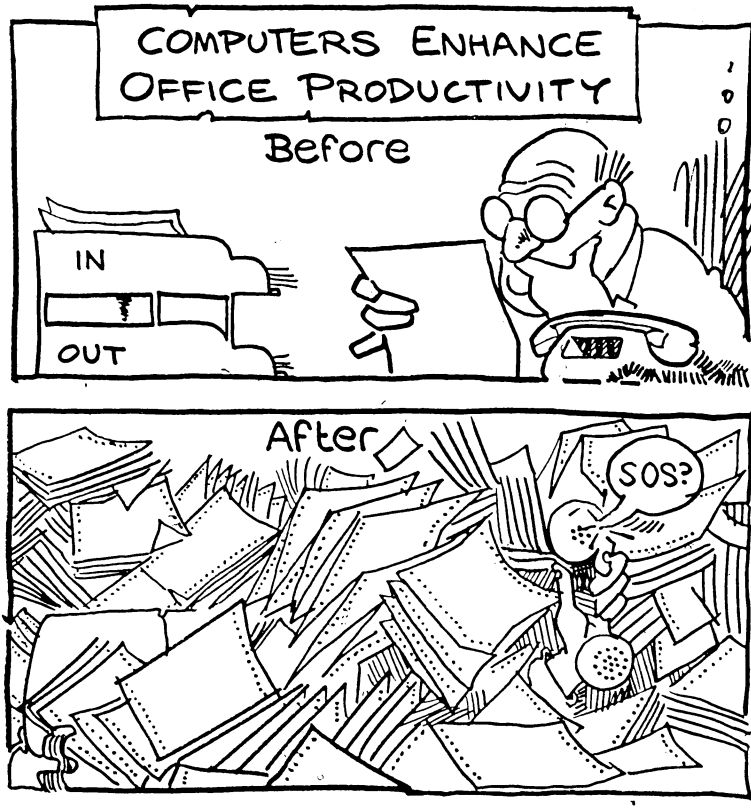
Try undeleting the word with ●→. Delete and undelete also work on more text.

In normal use, when you hold the [Del] key down you may sometimes overshoot, because of cursor acceleration. Undelete solves this problem, so now you can hold the [Del] key down without fear. When you overshoot, correct with ●→.

Experiment with deleting and undeleting in word/paragraph mode. after a little practice, it makes some moving or deleting functions much quicker.

Press the spacebar to return to normal edit mode.

If your text on the screen is now hopelessly garbled, delete it and reload SAMP.



With the cursor at the end of text, press ◨A The cursor will appear as a flashing "A". You are in the second special screen mode, "All" mode.

Experiment now with the four arrow keys. Notice how the ↑ and ↓ keys move you to the beginning or end of the text, but how the ← and → keys move you just one character to the left and right.

Press the spacebar to leave all mode. Position the cursor before the beginning of the last paragraph in the text, on the RETURN between "products." and "Now".

Re-enter All Mode with ◨A. Now press ◻↓ to delete forwards. You will notice that the remainder of the text, the whole last paragraph, was deleted. In All Mode, when you use the up and down arrows as delete keys they will delete all the text to the top or the bottom of the text. This can be handy when you want to erase large pieces of text. "Undelete" does not work in All Mode.

Press the spacebar to leave all mode. Make sure there is still some text in memory and move the cursor to the beginning of the text.

Press ◨U. This puts you in the third special screen mode, "Upper/Lower" Mode. The cursor will now appear as a flashing "U".

Using the → key, move the cursor forward over the text. Notice that all the upper case letters (capitals) are being converted to lower case. Stop at the end of the first paragraph.

Now move the cursor forward again, but this time hold down either the ◙ or the ◻ key as you do so. You will now notice all the lower case letters change to UPPER CASE.

Change what you want, and then press the spacebar to return to normal edit mode.

Most of the time you do not use the three screen modes, but occasionally they come in handy.

Tabulating (Tabbing)

On the keyboard you will see a key marked →| . This is the "Tab" key. It is used for tabulating, or setting information into columns.

Skip this section if you are not interested in tabulating. If you are interested, read on.

Clear out any text in memory, so that you have an empty file. Now press the →| key a couple of times. Notice that the cursor moves 10 spaces each time.

Go to the beginning of a line and type →|**Col 1**→|**Col 2**→|**Col 3**

Press **RETURN** to go to the next line. Type →|**100**→|**12**→|**2**

Notice how the columns line up. Go to the next line with a **RETURN** and type →|**24**→|**1002**→|**456**

Your screen should now look like this:

Col1	**Col2**	**Col3**
100	**12**	**2**
24	**1002**	**456**

Notice that the numbers are lined up, but at the beginning of the number. This would be all right if we had typed words in our column, but we usually want numbers to line up with the ends, or the decimal points, one above the other.

Go through the table and delete all the spaces except one between the numbers and between the "Col 1", "Col 2" and "Col 3" column headings. Your screen should now look something like this:

```
Col1 Col2 Col3
100 12 2
24 1002 456
```

As you can see, your neat columns are all untidy.

Now move your cursor to the space immediately after the "1" in "Col1". The cursor should be between the "1" and the "C".

Press ◉→|. This should move the whole line along, as the cursor moves to the next tab stop.

Now do the same for "Col2", moving the cursor to the space between the "2" and the next "C". This time "Col2" and "Col3" will move along, but "Col1" will be left in its correct position. Do you see what is happening?

Now move to the RETURN following "Col3", and press ◉→|. Then go to the next line using the → key.

Follow the same procedure on the next two lines. Position the cursor over the space (or RETURN) following the numbers, and press ◉→|. Your screen should now look like this:

```
Col1      Col2      Col3
100         12         2
 24       1002       456
```

This use of the ◉ key allows you to "tab with right justification", which is what you want for figures and money.

The tabs in SANDY are set 10 characters apart, but you can easily change this setting:

At the beginning of a line, press →|. The cursor will be at the tenth position. Now press ☐→|. You will hear a warning buzz. This buzz signifies that there was already a tab stop at that position, and that you have just cleared it.

Press the spacebar five times to move to position 15. Press ☐→| again. There will be no buzz. You have just set a tab stop at position 15.

Go to a new line and press →|. This time you will move to position 15 instead of position 10. Press →| again and you will move to position 20 -- you didn't change that one.

☐→| sets up a tab position if there is none at the cursor position, and clears a tab position if the cursor is on one.

Remember: when you are setting up tables you must end each row with a RETURN. If your table looks okay on the screen but does not print correctly then you probably left out some RETURNs.

Tabs are not relative to position on the screen. They are relative to the last RETURN. You can set tabs out further than your screen width. With tables wider than your screen width each row of the table will take up two (or more) lines of the screen. It looks a bit messy, but it works. It will print correctly. See Chapter 13, "Advanced Features", for an exercise in setting up tables wider than your screen.

End of all tutorials.

You should now be confident in the use of SANDY. The rest of the manual is a reference guide, which explains fully all the functions you have just learnt by example. Even if you feel confident now we recommend that you read the remainder of the manual. Often things become clearer when they are explained in a different way.

Review of Tutorial Three

Edit Commands

◙ **(Any arrow key)**: Undelete, in the opposite direction to which you deleted.

→| Different tabulating functions, including tab with right justification.

◑**Q**: Quote an item from the glossary.

◑**S**: Search for a string.

◑**X**: Exchange a string.

◑**G**: Grab or copy a string.

Screen Modes

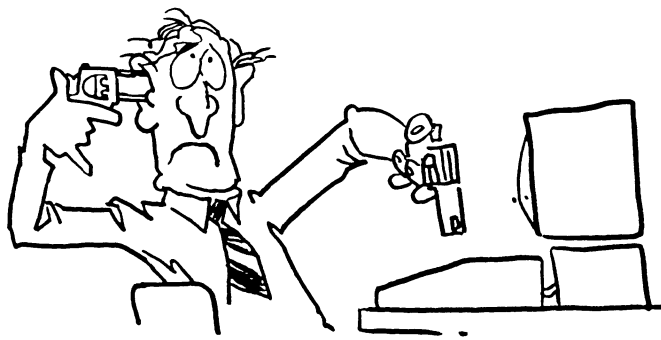
◑**W**: Word/Paragraph Mode. Actions are performed on words and paragraphs rather than characters and lines.

◑**A**: All Mode. Up and down movements and deletions work on all the text to the beginning or end of the file.

◑**U**: Upper/Lower Mode. Changes upper case to lower case and lower case to upper case as required.

Other Commands

You also learnt about the glossary file, and had a look at most of the remaining embedded print commands.



TOTAL DESPAIR

Chapter Six

Edit Commands

Edit commands allow you to move around in and edit the text when you are in edit mode. With the exception of the ← and → keys, do not attempt to use these commands when not in edit mode. Edit mode is easily recognizable: you are in edit mode whenever you have text on the screen, and that text will ALWAYS be preceded and followed by a thick horizontal bar to the left of the screen.

Edit commands consist of the four arrow keys, the Del key, and various Ctrl ("Control"), ◻ ("Open Apple") and ◼ ("Closed Apple") keys. Control and Apple functions are activated by holding down the Ctrl or either Apple key, then depressing the relevant key for the function. Sometimes either Apple key will work, in which case the symbol ◨ is used.

All keys on the APPLE //e have autorepeat. This means that keys will begin to repeat once they have been depressed about a second. This is very useful for repetitive functions, particularly moving around the text with the arrow keys. When using the arrow keys, SANDY accelerates the autorepeat function: the longer you hold it down, the quicker it goes.

Moving and Deleting

These are the most important keys, the ones that allow you to move around and change your text.

→ (Right Arrow)

Moves the cursor forward one character.

← (Left Arrow)

Moves the cursor back one character.

↑ (Up Arrow)

Moves the cursor up one text line (80 characters), or to the preceding RETURN, if that comes first. Actually the cursor always stays on the same line, and the text moves up or down.

↓ (Down Arrow)

Moves the cursor down one text line (80 characters), or to the next RETURN.

◨R

Go to start of file (top of text). This command moves the cursor to the very first character of the text. Use it as an aid to moving around the text quickly. If you at the bottom of the text and want to move somewhere near the top, it is usually quicker to go to the top, then move down. Also use it before saving documents, as SANDY saves documents starting from the cursor position.

Remember, "R" for Reset or Return to top of text.

◑B

Go to end of file (bottom of text). This command moves the cursor to the very last character of the text, and is the exact opposite of ◑R
Remember, "B" for Bottom of text.

Del

Deletes the previous character (the one immediately before the cursor).

◌←

Deletes the previous character. Identical function to Del.

◌→

Deletes the following character (the one that the cursor is on).

◌↑

Deletes the preceding line (40 or 80 characters), or back to the preceding RETURN, if that is closer. The last character of the "preceding line" is the one immediately before the cursor.

◌↓

Deletes the following line (40 or 80 characters), or to the next RETURN. The first character of the "following line" is the one that the cursor is on.

◉ with any arrow key.

Undelete, These commands will recover previously deleted text. Even after you have deleted text, SANDY retains that text in a part of memory, and it is possible to retrieve it. This "magic" function will allow you to recover from some errors. Provided you have not moved the cursor, this will always work, even for quite large bodies of text.

If you have performed any editing since your last deletion, you might find that the function might not work, or produces strange text. Eventually you might come to the part you want, at which time you can delete what you don't want.

◑D

Deletes all text in memory. It must be pressed twice, to prevent you accidentally erasing your text. It will erase all the text in the RAM, but will not change the contents of any file on a disk. Use it when you have finished editing a file and wish to work on another file. Always remember to save your text before deleting it, if that is your intention. SANDY does not automatically save documents on disk as you create them or edit them.

Remember, "D" for Delete all text.

Tabbing The tab key on the Apple is marked →|.

Tabbing, or tabulating, allows you to set up columns or tables. In this aspect SANDY works much the same as a conventional typewriter.

→|

Moves cursor across to the next tab setting. The tabs are the positions at which the cursor will come to rest when you press the →| key. If you have not set tabs, then SANDY defaults to tabs every ten spaces. When moving across existing text, →| will move you across the text, but it will continue to move past carriage returns and will insert spaces.

You can tab beyond the edge of your screen. If you have a 40-column screen, you can still put tabs in positions beyond position 40. All tab stops are relative to the previous RETURN, not to the screen position, so you can do this. It might look a little strange on the screen, but when it comes to print out it will line up perfectly.

□→|

Clear/set tab stop. The tabs are normally set ten characters apart, but by using this command you can set them anywhere you wish. If you press this command when you are at a tab position, it will clear that tab and sound a brief warning buzz. If you press it when you are not at a tab position, then that will become a tab position until cleared.

You can have any number of tab stops, but you can't set tabs past position 160, the end of a line 160 characters long. If you do tab beyond your screen line (40 or 80 characters), you will need to experiment a bit to feel comfortable with it. (See Chapter 13, "Advanced Features", for an exercise on tabbing beyond your screen).

●→|

Tab with right justification. The cursor moves in the same way as it does for a normal tab, but any word it is touching and the entire line to the right will be pushed along with the cursor. This command is especially useful for lining up decimal points.

Searching and Replacing

It is often convenient to replace words or phrases, or move them around the text. There are a number of ways of doing this, depending on the circumstances.

◐**S**string ◐**S**

Search for a string. A "string" can be any group of characters, including RETURNs, spaces and control characters. When specifying a string, ensure that it appears EXACTLY as you wish to find it. For example, ◐Sthe ◐S will find all occurrences of "the", including those in such words as "then" and "ethereal". SANDY does not distinguish between upper case and lower case, so it will also find "The" and "THE". If you want to find the word "the", type it with spaces before and after - ◐**S the** ◐**S**.

Multiple searches can also be performed, as the last search string is remembered. If you have just done a search and want to find the same string again (multiple search), press ◐S twice in succession. This is the same as searching for a null string, which is meaningless, so the command looks for the next occurrence of the last string that was specified. It will remember this last string again no matter how much editing or moving you have done in the meantime.

The maximum length for a search string is 255 characters.

⍁Xnewstring**⍁X**

Exchange, or replace a string. This command is mostly used immediately or soon after an⍁S After searching for a string and finding it, you may type this command. You will then be asked if you wish to replace the string with your new string. For example, if you were writing a novel you could change the name of a character.

If you answer **Y**, for "Yes", the string will be replaced and you will go to the next occurrence of that string, where the option will recur.

If you answer **N**, for "No", the string will not be replaced, and you will move to the next identical string.

If you answer **CTRL Y**, all remaining occurrences of the string will be replaced.

If you answer **T**, for "Terminate", the current exchange session will end. You may press T after a CTRL Y to stop the remainder of the automatic string exchanges. Pressing the ← key after a CTRL Y will speed up the replacement but you will not be able to see the replacements happening.

If you answer **Z**, just that one occurrence of the string will be replaced.

The maximum length of an exchange string is 255 characters.

Cutting and Pasting and Copying

[◑]G

Grab. This is used to move small amounts of text (up to 4096 characters). The first [◑]G marks the beginning of the text you want to move; the second [◑]G marks the end of the text you want to move, causing the grabbed text to disappear; the third [◑]G inserts that text at the position of the cursor.

You usually use the "grab" command in groups of three. First you mark the beginning of what you want to grab, then the end, then where you want it moved to.

If you were moving a group of paragraphs you would place the cursor on the RETURN before the first paragraph, then press ◑ G, then place the cursor on the RETURN after the last paragraph, and press ◑ G again, thus grabbing the group. Then you would place the cursor on a carriage return at the destination, and press ◑ G a third time. The paragraphs would then reappear at their destination.

Similarly if you are moving a full sentence, do your grabs on the full stop immediately before the sentence and the full stop immediately after the sentence, and then move the cursor to a full stop where you want the sentence to go.

Similarly when moving words or groups of words place the cursor on the space between the words. This will ensure that the correct spacing between words is consistently maintained.

You can use the grab function to copy pieces of text. As in the search command it is meaningless to grab a null string, or no text at all. If you attempt to do so, SANDY remembers the last piece of text you grabbed, and inserts it at the position of the cursor. So if you have performed the three grab functions, as outlined above, and then do a further two ◨ Gs, the text you grabbed will reappear. It will continue to do so every time you enter ◨ G twice in succession, until you grab a new piece of text. Use this multiple grab function when you want to copy the same piece of text into a number of different spots.

To use this command to make a copy rather than a move you would grab the text you want to move, press ◨G a third time to restore the grabbed text, then move the cursor to the place where you wanted to insert the copy, then press ◨G twice

For moving larger bodies of text, use the file commands and ◨L, and see the section on "Cut and Paste" in Chapter 13, "Advanced Features".

These three commands, ◨**S**, ◨**X**, ◨**G**, can occasionally be entered out of order. If you mix them up, or put them in the wrong order you will get the error message:

OTHER BOUND NOT FOUND OR STRING TOO LONG

Screen Modes

SANDY contains three different screen modes, in addition to the normal edit mode. SANDY can be used without them, but they are handy for a few specialized functions. To return to edit mode from any screen mode, press the spacebar or any key except the arrows or RUBOUT.

◑W

Word/Paragraph mode. In this mode the arrow keys move sideways by whole words (instead of characters) and up and down by whole paragraphs (instead of lines). The ⌫ and ● have the equivalent functions (delete and undelete by word and paragraph). It is very useful for moving quickly, or deleting text in a hurry.

In word/paragraph mode the cursor appears as a flashing "W".

◑A

All Mode. In this mode the left and right arrows move one character, but the up and down arrow keys perform their functions on all the text at once. For example, ↑ will move you to the top of text immediately, and ⌫↓ will delete all text following the cursor. Undelete will not work in all mode.

All mode is especially useful for deleting large bodies of text, and is mostly used for this function.

In all mode the cursor appears as a flashing "A".

If you are using scratch storage then up arrow in all mode is different from ◑ **R**, and down arrow different from ◑ **B**. Instead of moving all the way it only moves a substantial distance, not so far as to provoke a large delay.

◑ **U**

Upper/Lower mode. This mode allows you to convert upper case to lower case, or vice versa. The arrow keys move the cursor as usual but all letters that the cursor moves over are converted to lower case. If you hold down either apple key, then all text is converted to upper case. This only affects the 26 alphabetic characters.

In upper/lower mode the cursor appears as a flashing "U".

Other Commands

There are also other commands available from Edit Mode, performing various functions.

◨L

Set lower limit. Sets a mark in text for use with file commands. See the section in Chapter 13 on "Cut and Paste".

◨Q x

Glossary item (where "x" is any character). Typing this will quote the corresponding item from the currently loaded glossary. If there is no such glossary item, you will get the error message:

GLOSSARY ITEM MISSING!

Ctrl C

Cease using SANDY and return to basic. You must press it twice, to prevent accidentally leaving SANDY. ◨C will usually perform the same function. CTRL C will also halt a printer while it is printing. (Unless the printer has a buffer.)

◨F

Enter file command mode. This will return you to file command mode from wherever you are in the text, leaving the cursor where it was. Normally you will wish to leave the cursor at the top of text, as that is the spot from where you will usually wish to save the text. To get back to edit mode from file command mode, just press RETURN.

Ctrl Reset

Resets the computer. Use this command if the machine "hangs", if for any reason it refuses to accept any commands or goes dead. This can happen for a variety of reasons outside your control, but fortunately it is rare. Depending on exactly what has caused the machine to hang, and what function was being performed at the time, this command might do a number of things. You might return to where you were in your text, the machine might still be hung, or your drive might attempt to reboot. Whatever the case, it is a good idea to save your text (if you can) and reboot the system.

**P

Does a **test print to the screen**. This is essentially what your printed page will look like, with all the embedded print options performing their proper functions. The spacebar will stop and start the text: if you hold down the spacebar the text will scroll, if you do not hold down the spacebar the text will stop. R will return you to edit mode. Often you will want to return to edit mode during a test print, when you notice an error. If your page is wider than your screen (40 or 80 characters), you will just see the left and right edges of the page, with dots in the middle.

Use this command to check your formatting, pagination, hyphenations and the like. If embedded print commands appear on your screen print, that means they have not been correctly typed - they probably either have no period preceding them, or that period is itself preceded by one or more spaces.

If you do a test print soon after leaving a test print, usually to edit an error you notice in the text, the test print will continue from the top of the page you were on. But if you perform a large amount of editing or move the cursor extensively, the next test print will start from the beginning of the text again.

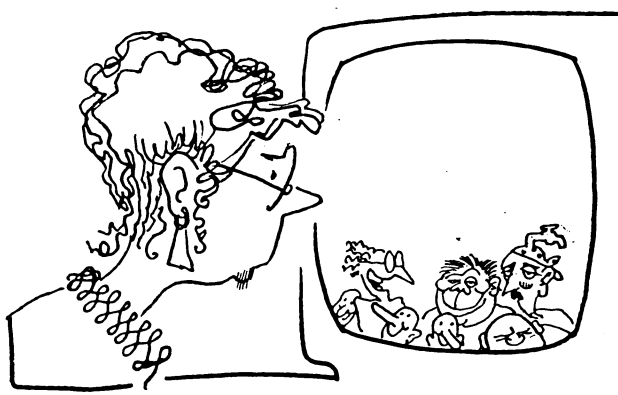
If your test print encounters a ".CONTINUE" Embedded Print Command at the bottom of the text, SANDY will ask you if you wish to continue the test print. If you answer **Y**, the next file will be loaded and test printed. If this happens, the current file will be erased from memory. If you do not want to lose this file, answer **N**, and save the document. Then restart the test print from a position close to the end of the document, and this time answer **Y**.

◨E

Embed the following character in text as **a control character**. Control characters are absorbed by the printer, not printed, and appear in inverse on the screen. Note that ESC and the ← and → keys are control characters. There are a number of reasons to embed control characters, usually to send a message to a peripheral or other computer that is receiving the text file (see Chapter 12). The ◨E command is needed because many control characters perform special functions, and when they are typed they perform that function rather than appearing in the text. It MUST be used when embedding the following control characters: Del, C, H, I, J, K, U.

Other control characters may be embedded just by typing them normally, or by pressing ◨E followed by that character.

Note that there is a complete table of characters on the reverse side of your word processor disk, called ASCII table. If you need a character you can look it up in this table. If you need a character frequently you can grab it from this table and put it in your glossary.



DON'T BE UPSET IF YOU SEE ODD CHARACTERS
AT THE BOTTOM OF THE SCREEN

Chapter Seven

File Commands

File command mode is the mode from which you perform all commands to do with the manipulation of files: loading, saving, transferring, etc. SANDY has two main modes, file command mode and edit mode.

When you first boot SANDY, you enter file command mode.

RETURN moves you from file command mode to edit mode.

[F] moves from edit mode to file command mode. When you move to file command mode, SANDY will tell you how many characters are above and below the cursor.

Avoid all control characters. SANDY edit commands, except the ← and → keys, will not work when in file command mode. If you make an error while typing a File Command, press the [Del] key repeatedly to clear the error.

Often you want to edit your file commands. For example you might type "SAVE", and realize that you do not want to save, or you might wish to change the filename to something else.

Now suppose you press **S**, for save. The command line displays:

SAVE FRED

Suddenly you wonder if this is the right disk, and you want to type C for catalog, to inspect the disk. In that case you press left arrow repeatedly to move the cursor back to the beginning of the line, then you press C, for catalog. The command line now displays:

CATALOGED

with the cursor on the E. You then press carriage return, and all is well. The command line now displays:

CATALOG

and the disk is cataloged.

The file command is the text between the question mark and the cursor. For example if your command line says:

LOAD SAMPLE

and your cursor is sitting on the S in sample, then if you press carriage return then you have issued the command LOAD, which loads the default file, which in this case is called SAMPLE. Although this is equivalent to the command "LOAD" your command line will display "LOAD SAMPLE".

If however, your cursor is sitting on the A in sample and you press carriage return then then your command line will display:

LOAD S

which will probably result in an error message, because there is probably no such file.

Similarly suppose that you press L, and your command line displays the command:

LOAD SAMPLE

but you do not want to load sample, you want to load FRED. You then type FRED. The command line now displays: LOAD FREDLE, with the cursor on the L. You have partially overtyped the SAMPLE. You then press carriage return, the command line then displays:
LOAD FRED
and FRED is loaded.

File Commands

There are six special File Commands:

L (for LOAD).

This command loads a file from a disk. It is only necessary to press L, "LOAD" will then appear on the prompt line. You may then type the name of the file you wish to load. If you do not type a file name, the last file loaded or saved will be reloaded. After a file has loaded, you will be left in edit mode, at the bottom of the text.

The LOAD command loads a file regardless of the current contents of the memory. This means that if you load a file without deleting the contents of memory (⍐D twice in edit mode), the file you are loading will be inserted in or appended to the existing text in memory. The new file will appear at the position of the cursor in the old text. This will allow you to insert small documents within large ones,

for example. If you don't want to combine files, just ensure that the memory is free of text before loading a file. If you do attempt to load a file when there is still a file in memory, SANDY will prompt you with the message:

TEXT IS PRESENT IN MEMORY. DISCARD Y/N

This will give you the option of retaining or discarding the contents of memory. If you answer **Y**, for "Yes", whatever text is currently in memory disappears. If you answer **N**, for "No", the old text is retained and the new file is read in, inserting itself at the position of the cursor in the old text.

The LOAD command allows you to load a number of files at once, a very useful procedure when "boilerplating", or building up a long document from a number of short paragraphs. If you want to combine several files for printing or saving, the form of the command is

L f1,f2,f3,...fx

where f1...fx are the filenames you wish to load. For example, to load the three files "DOG", "CAT", and "WALRUS" one after the other, you would type

L DOG,CAT,WALRUS

Because you must type in the complete file name exactly as it appears in the catalog, it is best to keep the names of such documents short. Note that there is no comma before the first file name.

Of course, you can also combine files by loading one and then loading the next and so on, or by putting them all in a glossary.

Loading binary files

Some word processors produce binary files instead of text files. SANDY will load these these binary files as if they were text files. When they are saved they become text files.

For example if you wished to load a binary file called BINTEXT you would enter file command mode and type "L BINTEXT", just as if it was a text file. You would then edit it to Sandy format, and save it. You may have to do substantial editing to get it into Sandy format.

Of course this only works if you load a binary file that is really a text file in disguise. If you load up a binary file that is really a program it will not make any sense at all. You will see a lot of strange looking garbage.

Sandy will load any type of file except basic or relocatable files. In order to load a basic file it must first be converted into a text file - see advanced features.

S (for SAVE)

This command saves a file to a disk. It is only necessary to press **S**, "SAVE" will then appear on the prompt line. You then type the name you wish to call the file. If you do not type a file name, the last file name used will be used for the saved file. In this case the file will overwrite and totally erase the earlier version of the file of that name. If you do not want that to happen you will have to call the file a different name, either by typing over the old name or adding something to the end of it. After a file has been saved, you will be left in edit mode at the bottom of the text.

A file is always saved from the position of the cursor to the bottom of the text, or lower limit marker (Set by ◨L). For this reason, always ensure that the cursor is at the top of the text (◨R edit mode) before saving, unless you want to save only part of the document.

Therefore whenever you are about to save or print a part of the text, instead of the whole text, SANDY will query this. If the cursor is not at the top of the text then SANDY asks:

CURSOR NOT AT TOP OF TEXT
Intentional? [Y/N]

If you answer "**N**" or press carriage return then SANDY will return to edit mode and the cursor will go to the top of the text.

If you have set a lower limit in the text (with a ◨L), the SAVE command will save the text from the cursor to that limit. Before it does this SANDY asks:

LOWER LIMIT SET
Intentional? [Y/N]

If you answer "**N**" or press carriage return then SANDY will return to edit mode, with the lower limit cleared. For the use of ◨L see the section called "Cut and Paste" in Chapter 13.

C (for CATALOG)

This command catalogs (lists all the files on) a disk. It will put a letter (A-Z) next to all text files and invite you to select one. If there are more than 23 files on a disk, you may step through the CATALOG by pressing the spacebar. When you have selected the desired file, it then becomes the logged file, i.e., the one that the LOAD and SAVE commands will refer to.

You may also change the logged drive by using the CATALOG command. If you type

CS5,D2

you will catalog the disk in Slot 5, Drive 2. It is not necessary to put a comma after the "C". For more information on changing the logged drive, see the section below, "How to Select Slot, Drive, and Volume".

P (for PRINT)

This command will allow you to print the document. Refer to Chapter 9, "Printing".

O (for OPTIONS)

This command lets you alter some of the parameters of your system. The forms of the command are:

O PRINTER **RETURN**

This will display the primary print options (see Chapter 9, "Printing"). You may alter these options, or leave them as they are by stepping through them with the RETURN key.

O filename RETURN

This allows you to see the slot and disk drive assigned to a particular file, and allows you to alter them. If you do not type a filename then the command assumes the logged file. If you type a filename, you can change the name of the logged file. This allows you to change the details of your logged file, so that next time you save the document in memory you can save it to a different drive or under a different name.

After you type this command, you will be shown the slot and drive associated with the file, and given the opportunity of changing them. You will then be returned to file command mode.

How to Select Slot, Drive and Volume

The computer controls its disks through a disk drive controller, which is connected to slot 6. There may be several drives attached to each controller (though the usual maximum is 2), and possibly other controllers with other drives. If you are using floppy disks then each disk has only one volume on it, i.e. one volume number attached to it. If this is the case you need worry only about the slot and drive parameters. If you have a hard disk you may have hundreds of individual volumes all on the same disk, with the same slot and drive numbers.

The last used (logged) slot, drive and volume are assumed by all relevant file commands. When you first boot SANDY, then the slot and drive from which you booted become the logged ones.

All file commands (except LOAD, SAVE and OPTIONS) use normal DOS conventions in their format. This means that any command can be followed by

,Sx,Dy,Vz

where x, y and z are the slot number, drive number and volume number. Notice the leading comma. These are known as the "drive parameters". Any or all of these three may be typed, and whatever they are they become the logged drive parameters until changed with another file command.

Do not use these parameters with LOAD and SAVE, as they use a special format. For example, if you typed

LOAD SAMPLE,S6,D2

then SANDY would attempt to load 3 files, called "SAMPLE","S6" and "D2" instead of loading "SAMPLE" from Slot 6, Drive 2. Always change the logged drive parameters by the OPTIONS command beforehand, if necessary.

If you change the logged parameters with the CATALOG command, e.g. **C,S5,D1,V23**, these parameters are changed, but the logged file remains the same. **So do the drive parameters for the logged file.** The next time you reference the logged file, the drive parameters will change back to those of the logged file. This means that when you want to save a file to a drive different from the one it was loaded from, you do not use the drive parameters with your SAVE command. Rather, change the logged drive with the OPTIONS command, then SAVE the file.

G (for GLOSSARY)

This command allows you to load a glossary into memory. Use of the glossary is explained fully in Chapter 10, and in Chapter 5, the third tutorial. When you first boot SANDY, the glossary on the program disk loads into memory automatically. If you want to change this glossary to one of your own, you must put the disk containing your glossary into the logged drive, enter file command mode, and use the Glossary command. Your glossary must be a file named "GLOSSARY", and be in the correct format, as explained in Chapter 10.

Additional Commands

As well as these six commands, you can type any DOS command. DOS is the Disk Operating System. For full details of DOS commands, refer to the DOS manual. Some of the DOS commands that are useful with SANDY are:

INIT

This command initializes, or formats, a disk. It is not necessary to initialize disks from within SANDY, but it is quite easy and often desirable. The form of the command is

INIT filename

where "filename" is the name you wish to call the first file on the disk. This file is usually called the "HELLO" program, and is never a text file. Disks initialized from within SANDY will not boot, but they have an extra 32 sectors available (528 compared to 496), because they do not contain DOS.

RENAME

This command allows you to rename files, an occasionally useful function. The form of the command is

RENAME oldfile,newfile

where "oldfile" is the existing file name and "newfile" is the name you wish to change it to.

LOCK and **UNLOCK**

These commands allow you to protect files. When a file is locked, it cannot be overwritten, even if there is no write-protect tab on the disk. A locked file can still be loaded, however. The form of these commands is

Spacebar LOCK filename
and
UNLOCK filename

where "filename" is the name of the file you wish to lock or unlock. It is necessary to type a space before LOCK so that SANDY doesn't confuse it with the short version of the "LOAD" command. It is a good idea to always lock your boilerplate paragraphs, those short documents you sometimes use to make up longer documents. Otherwise it is very easy to accidentally erase them during repeated loading and saving operations.

DELETE

This command allows you to delete a file from the disk, providing the file is not locked and the disk has no write-protect tab. The form of the command is

DELETE filename

where "filename" is the name of the file you wish to delete.

RUN

This command allows you to run other programs from SANDY. It is especially useful when using the mailing and labelling functions, as they are separate programs. The form of the command is

RUN filename

where "filename" is the name of the program you wish to run. The program is never a text file.

BRUN

This command allows you to run binary programs from SANDY. There is one binary file on your SANDY disk, called "COPY", which allows you to copy disks easily (see Chapter 13). The form of this command is

BRUN filename

where "filename" is the name of the binary program you wish to run.

VERIFY

This command allows you to verify a particular file for possible poor recording. Use it if you are unsure if a file saved correctly, or if you suspect that your files are corrupted for any reason. The form of the command is

VERIFY filename

where "filename" is the name of the file you wish to verify. If a file verifies, nothing happens, but if it does not verify you will get an "I/O ERROR" message.

EXEC

This command allows you to edit a basic program. Its use is explained in Chapter 13, "Advanced Features".

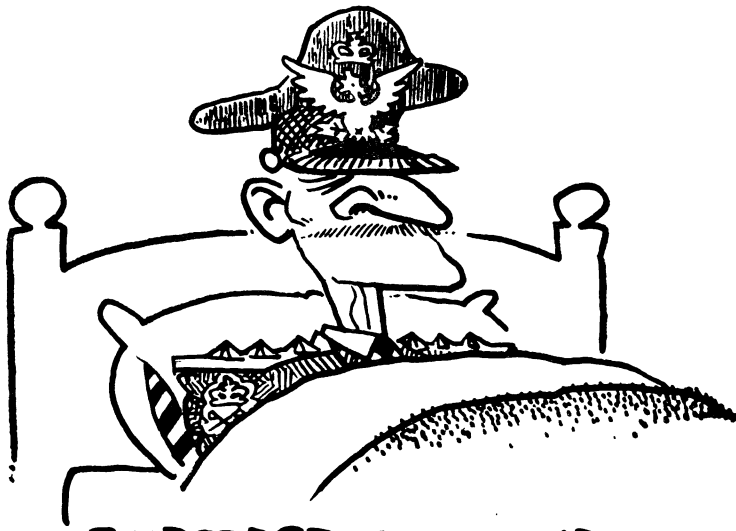
There are other file commands, but they are of limited use with SANDY. For a full list of all DOS commands, consult the DOS manual.

Chapter Eight

Embedded Print Commands

Embedded Print Commands are commands in the body of your text that affect the format and layout of your document. They do not themselves print. There are four main rules to follow with all Embedded Print Commands:

1. They must be preceded by a RETURN.
2. They must have a full stop, or period (.), as their first character.
3. They must all be in UPPER CASE (Capitals).
4. They must end with a RETURN.



Embedded Print Commands are themselves text, and are subject to all the normal edit commands. You can search for them, edit them and grab them. Many Embedded Print Commands are followed by a number. When they are followed by a number you might or might not leave a space before the number, but be consistent. It will make searching for strings containing the numbers much easier.

Some Embedded Print Commands are similar to the primary print options (see Chapter 9). Where they conflict, the Embedded Print Command is dominant, except where otherwise stated. For example, if you set the page width at 80 characters at primary print option time, but use the Embedded Print Command ".PAGE WIDTH 90", your page width after the command occurs will be 90 characters. This allows you to make changes in the middle of your text.

As always, the best way to become familiar with the Embedded Print Commands is to experiment with them. There is a sample text file called "EMBED" on the reverse side of the SANDY disk that will show you some examples of their use. If you print out this file, and compare it to the text on the screen, you will see the effects of some of the commands.

If you misspell your command, or use an impossible value, printing will stop and you will receive the error message

ILLEGAL PRINT COMMAND

This may happen if you set the left margin greater than the page width, for example. You will get this message with any line starting with a full stop, if what follows is not a valid Embedded Print Command. If you want to start a line with a full stop, put a space immediately before it. If you want to start a line with more than one full stop, SANDY will recognize that you are not attempting an Embedded Print Command, and you need not use a leading space.

Because some of the Embedded Print Commands are quite long, and because you will probably use them repeatedly, it is a good idea to incorporate all of your commonly used ones into a glossary. For use of the glossary, see Chapter 10.

There follows a list of all Embedded Print Commands, with examples of their use. Further examples may be found in the text file EMBED, on the reverse side of your SANDY disk.

.CENTRE
or
.CENTER

Centers the next paragraph, places it in the centre of the page, as determined by page width. Be sure that this command is placed immediately before the paragraph you want to center, as it turns off after one paragraph. ".RELATIVE LEFT MARGIN" will affect this command, so ensure that the line is where you want it. Set the ".RELATIVE LEFT MARGIN" to 0 if you want your line in the middle of the page.

If you only want to center a single line it is probably more convenient to place a soft space at the start and end. See the chapter on embedded control characters.

.COMMENT comments

Lets you enter comments in the body of your text. These comments will not print, and are limited to a maximum of 254 characters. You cannot include a carriage return in your comments text, as this signals the end of the Embedded Print Command.

Comments are just that - comments. You can read them but they are not printed. For example I often use them when I am writing a letter to someone and I suspect that this letter might later be used in legal action. I put comments in the letter so that later I will be able to recall the circumstances that lead to the letter being written.

Comments are a useful place to park printer control strings and ".REDEFINE" commands, or to remind you of things. For example, if you have embedded a CTRLS in your text (to stop the printer), the ".COMMENT" remarks could tell you why you stopped the printer, perhaps to change print wheels. It is also a useful spot to put markers in your text, like section numbers you do not want to print.

.,
Same as .COMMENT, but shorter. This has the convenience that you can neutralize an embedded print command by putting a comma after the full stop.

.CONTINUE filename

Tells SANDY to retrieve another file and print it. It is used at the end of a piece of text to be printed. ".CONTINUE" directs SANDY to clear the memory, load the requested filename, and print it out. All primary print options and current Embedded Print Commands are carried through to the next file.

This command is used to chain together multiple files for printing, such as the chapters of a book. It will print them out in sequence automatically, assuming each file has the command at the end, directing SANDY to go on to the next. It means you don't have to load a document, print it, delete it, load another, print it, delete it, etc.

SANDY remembers which drive you were using for a particular file, which allows you to print documents from more than one disk drive. Make sure that you specify the "filename" correctly, using all upper case, and that you have the disk containing that file mounted in its drive.

.EJECT

Forces a page break. The text will continue to print from the top of the next page. There is a conditional form of this command, see ".NEEDS".

.FOOTER text

This will print a footer, an unchanging message at the bottom of each page, starting at the page following the command. Do not confuse footers with footnotes. Sandy does not support footnotes except at the end of a chapter.

The new features file give examples of both headers and footers

You can, and usually do, include the page number in a footer, as described below.

.HEADER text

Exactly the same as ".FOOTER", except that the message prints at the top of the following page.

You usually want to have headers and footers centered or right justified. You usually do this by means of soft spaces (see Chapter 12, "Control Characters and Control Codes"). You also usually desire a page number to appear within a header or footer. This is accomplished by means of a CTRL P.

A soft space is entered into your text by typing Ctrl _ or **CTRLE SHIFT**_, and displays as an inverse plus sign. A CTRL displays as an inverse P, and is entered into your text like most control character, by typing CTRL P.

Some examples of headers and footers:

.HEADER Ctrl _ page CTRLP

will cause the word "page", followed by the page number, to be printed at the top right of every page.

After you have typed it in the command will look like this:
.HEADER + page P

.FOOTER Ctrl _ - Ctrl **P** Ctrl _

will cause the page number to be printed at the bottom of every page, centered, and placed between two dashes (legal format).

After you have typed it in the command will look like this:
.FOOTER + - P - +

A more exotic example is:

.FOOTER Manual Ctrl _ **Chapter 3** Ctrl _ **July 1983**
.HEADER Ctrl _ **July 1983** Ctrl _ **p** Ctrl **P**

After you have typed them in the commands will look like this:
.FOOTERManual + Chapter 3 + July 1983
.HEADER + July 1983 + pP
This will produce a header on the following pages with date centered and page number right justified, and a footer on the current and following pages, with the word "Manual" left justified, "chapter 3" centered, and the date right justified.

Footers and Fold width

The default header is the page number by itself. If you do not want a header (perhaps because you are displaying your page number in a footer) then you must turn the header off by the command:
.HEADER
The command".HEADER', followed by nothing at all sets the header to nothing at all, thus switching off the header

If the fold width is set too small then the header and or the footer will not be printed, because there will not be enough room for them.

If you are using both a header and a footer then the minimum satisfactory fold width is six. If you are using only a header or only a footer then the minimum satisfactory fold width is three
If double spacing is used then the fold width must be increased accordingly.

When you vary your fold width you do not, repeat do not, vary the form length. See fold width under primary print options. If you change the form length to "compensate" for the change in fold width you will mess up the pagination.

Legal Style Page Numbering

The legal style of page numbering is to have the page number centered at the bottom of every page. The default style used by SANDY is to have the page number right justified at the top of the page.

To select legal style page numbering you place the following two embedded print commands near the start of your text:
.HEADER
(to set the header to nothing - that is to say, to turn off the page numbering at the top of the page.)
.FOOTER Ctrl_ - CTRLP - Ctrl_
(To give you a centered footer with a page number in the middle. This will print on the paper like the page numbers in this file, and will display on your screen as:
.FOOTER + - P - +
Look at the start of the NEW FEATURES file for an example

.INDENT x

Will indent the first line of each paragraph by the number of characters you specify. You can specify a negative number, as long as this does not move the line left of your preset margin. See "Outline Format" in Chapter 13, "Advanced Features".

.L
.LEFT JUSTIFY ONLY
Left justification only. If you have specified in your primary print options that you want your text right justified, this command will turn it off. ".R" will turn it back on. Use these commands before and after tables, or whenever you want justification temporarily removed.

.LEFT MARGIN x

Sets or resets the position from which the first character in a line prints. It ignores and does not change the value set for the left margin in the primary print options.

Use this command when you want something to print in the same place every time, regardless of any other text. A good example is the printing of envelopes, which you would want to print in the same spot each time regardless of the value set for the left margin in the primary print options. Compare this command with ".RELATIVE LEFT MARGIN".

I use this command in my boiler plate letters, because I want the address to print in the same horizontal position relative to the letter head, no matter what left margin I may select.

.RELATIVE LEFT MARGIN or .RLM cancels a left margin command because relative left margin is always relative to the value set in the primary print options, not relative to the value set by the left margin command.

.NEEDS x

Conditional eject, where "x" is the smallest number of lines to be left on the page. For example, if you have a table 20 lines long, you can preface it with a ".NEEDS 20" command. This will ensure that if there are fewer than 20 lines left on the page when the command is encountered, the page ends there and all the table will print on the next page.

You should also use ".NEEDS" and ".EJECT" to control such things as headings. You do not want a heading to appear at the bottom of one page, and the material it heads to appear on the next page.

If you suspected this might happen you would place a ".NEEDS 10" before the heading. If you wanted the heading to appear at the top of the page you would place an ".EJECT" before the heading.

In a length document it is a good idea to run several test prints to the screen, and insert ".NEEDS" commands wherever page breaks occur in inappropriate places.

Unlike many word processors SANDY has an automatic widow and orphan suppression. This means that it avoids breaking paragraphs in such a way that there is one line of a paragraph on one page, and the rest of the paragraph on the other page.

SANDY will usually determine the correct pagination, but if you want to check it or change it, use the test print to screen feature to determine where the page breaks should be, then insert the ".EJECT" or ".NEEDS" commands accordingly.

.NOINDENT

Overrides an ".INDENT" command, both in the primary print options and the Embedded Print Commands. It applies only to a single following line. Note that "NOINDENT" is all one word.

.PAGE NO. x

Sets the page number for the current page. This is mainly used for section numbering - that is to say numbering pages by chapter and page number from the beginning of the chapter, not from the beginning of the book. See"Advanced features.

.PAGE WIDTH x

Sets the width of the document, measured from the first possible print position. It cannot be altered by any ".INDENT", ".LEFT MARGIN" or ".RELATIVE LEFT MARGIN" commands.

This in effect sets the right margin. For example if your paper is 80 columns wide and you set the page width to 70 columns, then you will have a 10 column right margin.

.RPW
.RELATIVE PAGE WIDTH

Sets the page width relative to the value set in the primary print options.
For example if you wanted a section of text set off from the rest by bringing it in on both sides you would start the text by
.RLM 5
.RPW -5
and end it by
.RLM 0
.RPW 0

.R
.RIGHT JUSTIFY

Reinstates right justification in the text (see ".L")

.REDEFINE alpha string

Redefines any escape code to be equal to any control code, or sequence of control codes. This is especially useful when sending messages to printers, as different printers use different control codes to perform different functions, such as superscripting or underlining. It is also useful for the transmission of control characters that can't normally be sent to a printer or down a line.

Use of the .REDEFINE command is explained more fully in Chapter 12, "Control Characters and Control Codes".

.RLM
.RELATIVE LEFT MARGIN x

Sets or resets the Relative Left Margin, relative to the position set in the primary print options. You can use it by itself, or with the ".PAGE WIDTH" command to temporarily change the margins of a piece of text. It does not change the left margin, as set in the primary print options. Compare it with the ".LEFT MARGIN" command.

.RELATIVE LEFT MARGIN cancels .LEFT MARGIN command

.SPACE x

Sets or resets line spacing. Use it if you want double or triple spaced type (text with one or two extra lines between every line of text).

Embedded Print Command Checklist

Embedded Print Commands cause most of the difficulties for the new user of SANDY. Use the following checklist if you have trouble

1. "ILLEGAL PRINT COMMAND". If you attempt to print or test print something and this error message appears, then when you return to Edit Mode the cursor will be positioned at an unacceptable Embedded Print Command, e.g., ".LEFTMARGIN" instead of ".LEFT MARGIN". If however your cursor has not moved, then there is something wrong with your primary print options, e.g., your "PAGE WIDTH" is less than your "LEFT MARGIN", or your "FOLD WIDTH" is greater than your "FORM LENGTH".

2. Ensure the command has a RETURN before it. If the previous line ended at the final character in a screen line, it might look as if the command is at the start of a text line when in fact it is not.

3. Ensure that the period (.) follows immediately after a RETURN. It is easy to accidentally insert a space before the period.

4. Ensure that there is a RETURN immediately following the command.

5. Ensure the command is correctly spelt, including spaces.

6. Ensure that the number in your ".RELATIVE LEFT MARGIN" command doesn't place the next character at or past the end of the line, as set in your in your primary print option "PAGE WIDTH".

7. Ensure that the number in your ".RELATIVE LEFT MARGIN" or ".INDENT" command doesn't place the next character too far left.

8. On commands that refer to the next line only, such as ".CENTRE" and ".NOINDENT", ensure that there is no space between the command and the line it refers to.

9. If the centering is askew, ensure that you have reset the ".RELATIVE LEFT MARGIN" to zero beforehand.

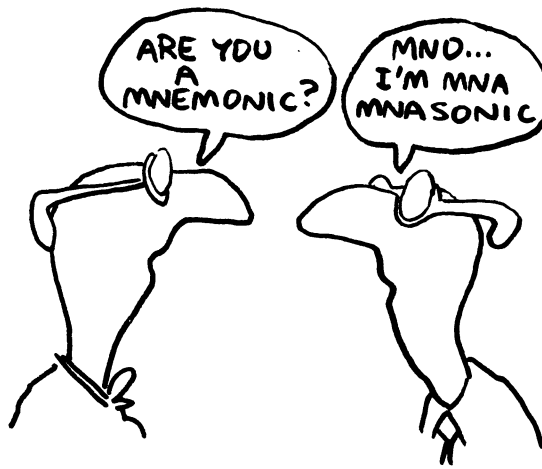
Chapter Nine

Printing

This chapter concerns the process of printing out your document. Many of the commands to do with formatting your printed output are Embedded Print Commands, and are dealt with in the chapter on that subject (Chapter 8). There are two print option menus, primary and secondary.

Primary Print Options

The Primary Print Options control a number of functions, chiefly those to do with the whole document, rather than just a section of it. The Primary Print Options menu (see below) appears the first time you issue a **P** (for "Print") command from File Command Mode each session. It can also be accessed at any time by typing OPRINTER (for "Options Printer") from File Command Mode or option "4" from the Secondary Print Option menu.



IRRELEVANT JOKE

After selecting Primary Print Options, you will see the following display on your screen:

PRIMARY PRINT OPTIONS

LEFT MARGIN	10
INDENT	0
PAGE WIDTH [INCL. LEFT MARGIN]	70
RIGHT JUSTIFIED [Y/N]	Y
FOLD WIDTH [BOTTOM MARGIN]	7
FORM LENGTH	66
PAGE NUMBERS START AT	1
STOP EACH PAGE [Y/N]	N
LINE SPACING	1
PRINTER SLOT [SLOT ERROR FATAL]	1
PRINT [Y/N]	Y

All of these values are the DEFAULT values. They are suitable for printing A4 pages, or most types of continuous stationery. They can be changed temporarily or permanently.

Temporary Changes to the Primary Print Options

If all Primary Print Options are how you want them, you may go straight to print by pressing the spacebar. If you want to change any of them, you may step through them, up or down, by using the arrow keys. When the cursor is positioned over one you want to change, type in the new value, followed by a RETURN.

LEFT MARGIN: The number of spaces between the edge of the paper and the first character in each line, assuming that the Embedded Print Command ".INDENT" is set to zero. Default value "10".

INDENT: The number of characters the first line in each paragraph will indent. It is relative to the "LEFT MARGIN". Default value "0".

PAGE WIDTH: The width of the page in characters, including all indentations. Most normal pages are about eight inches in width, and the usual pitch (characters per inch) is 10. Therefore, allowing for margins, you can usually comfortably fit between 65 and 75 characters across the page. You may have to change this figure for different widths of paper or pitches of print. Default value "70".

RIGHT JUSTIFIED (Y/N): Do you want the right hand side of the page to line up straight? If you answer Y, for "Yes", to this option, SANDY will automatically insert spaces between words to "push" the text across to the right side. An answer of N, for "No", will not justify text. Default value "Y".

FOLD WIDTH: The number of lines between the last printed line and the start of the next page. It is sometimes called the "top and bottom margin". If you want no page breaks, this should be set at "0". Default value "7".

When you vary your fold width you do not, repeat do not, vary the form length.

FORM LENGTH: The number of lines in a page. Virtually all computer stationery is 11 inches long, and there are usually six lines to the inch, giving 66 lines to the page. "FORM LENGTH" minus the "FOLD WIDTH" is the actual number of lines that will print on the page. Default value "66".

If you change the form length to "compensate" for the change in fold width you will mess up the pagination. The form length already includes the fold width. The form length is the length of the form, the length of the piece of paper on which the text is printed. It is not the number of lines actually printed on a page. On one occasion a bloke phoned me, long distance, quite angry and rude, and said "How the #!&&# do I change the top and bottom margins. Every time I try to change them your word processor goes berserk." I talked to him for about half an hour, long distance call, and was unable to explain to him the solution. The only solution he wanted was a way to fix the "bug". So he was unable to comprehend my explanation, because he had a fixed idea as to how a word processor should work, and any deviation from this way of working was to his mind a bug, which should be fixed.

PAGE NUMBERS START AT: Refers to the printed page number of the text about to print. Page numbers will print on the top right hand edge of the page, and take up three lines of text, one for the number itself and two blank lines. The first page is not numbered if it is PAGE 1. If you do not want page numbering, type 0 for this option. Page numbers are consecutive through groups of files linked by the .CONTINUE Embedded Print Command. Default value "1".

STOP EACH PAGE (Y/N): If you answer Y, the printer will stop at the end of each page, to allow you to put a new piece of paper in the printer or to check the print. If you answer N, the printer will print continuously, not stopping after each page. Use "N" when you have continuous stationery and "Y" when you have cut sheets. Default value "N".

LINE SPACING: The number of line feeds after each printed line. An answer of 2 will double space text. Default value "1".

PRINTER SLOT: The peripheral slot within the Apple that the printer is connected to. This is almost always slot 1, but is not necessarily so. If you have more than one printer connected to the Apple, you must specify which printer you want your output directed to with this command. If you send the printer to a slot that has no printer, the machine will "hang", or appear to freeze up. Should this happen, pressing the reset button at the back will usually return you to Edit Mode with your text unharmed, though on some occasions you may have to retrieve your text from disk. Default value "1".

PRINT (Y/N): N permits a return to your text (Edit Mode); Y prints the document to the printer. Ensure that your printer is turned on before attempting to print documents. Default value "Y".

Changing the default values of the primary print options

If the default values for the Primary Print Options do not suit you, you may change them. For example you may want to change the "STOP EACH PAGE" option from "N" to "Y" if you use only cut sheets Steps to follow to change these options are:

1. Access the Primary Print Options by using the OPRINTER (for "Options Printer") command from File Command Mode.

2. Make any changes you would like in the Primary Print Options.

3. Return to File Command Mode by pressing spacebar.

4. Remove the write-protect tab from your SANDY program disk.

5. Put your SANDY program disk in the currently logged disk drive.

6. From File Command Mode type RUN PRINTER DEDICATE RETURN. This will write your changes onto the disk.

7. Remove your SANDY program disk and write-protect it.

8. Reboot SANDY by hitting reset or control reset.

From now on, the changes you made will be the default Primary Print Options on that copy of the program disk, until they are changed again in the same way

Secondary Print Options

After the primary print options have been used once during a session, the Secondary Print Options will appear in their place when you issue a "PRINT" command from File Command Mode. The values for the Primary Print Options will be those which you last specified.

There are seven Secondary Print Options:

1. Pressing 1 will print the text immediately from the position of the cursor.

2. Pressing 2 will feed through the remainder of the form and start printing from the top of the next form. If the printer is at top of form, it will print from there. This is the default value for the Secondary Print Options.

3. Pressing 3 will restart printing exactly where it was previously stopped (by a CTRLC).

4. Pressing 4 will return you to the Primary Print Options.

5. Pressing 5 will return you to Edit Mode (your text).

6. Pressing 6 will cause the computer to ask you the number of copies you wish to print. Whatever numeric answer you give to "NUMBER OF COPIES?" will cause SANDY to print out that number of copies of the document. For example typing 12RETURN would make the computer print out the document 12 times.

7. Pressing 7 allows you to "Print to Disk". You will be prompted for a filename, and the file will then be saved in a formatted form, i.e., the disk file will have all the spaces and RETURNs and margins of the printed copy, with no Embedded Print Commands in evidence.

This creates a formatted text file from your unformatted file. That is to say, leading blanks are generated for the left margin, carriage returns are inserted as required by the page width, embedded print commands are acted on but are not present in the formatted file, and so forth.

This option is provided in order that you can interface SANDY with word processors such as GUTENBERG, (TM) which require their text formatted, also "fancy font" printer drivers, certain communication programs, or anything else that requires their text files formatted.

This is particularly useful for electronic mail. You prepare your letters on SANDY. When the letter is correct you print it to disk. Then later you load your terminal program and dial up the SOURCE, TELEMAIL, or DIALCOM, and when the prompt comes up to type in your letter, instead of typing it in you use the file transmit facility of your terminal program. Your terminal program will then transmit the file.

The embedded print command ".CONTINUE" is ignored when printing to disk. All other commands are acted on as usual.

If you require multiple copies but are in the Primary Print Options menu, you must answer N to "PRINT (Y/N)" to return to Edit Mode. You should have done a test print to screen first. Similarly for print to disk

The default value for the Secondary Print Options is "2", start printing from top of form. Pressing a RETURN rather than an option number selects this option.

Test Print on Screen

P from Edit Mode will give a test print on the screen (see Chapter 6, "Edit Commands"). Your text will look exactly as it should when you print it out, with all print options in effect. You will only see as much text as your screen will allow, 24 lines and 40 or 80 characters across. If your page is wider then your screen, you will see only the left and right edges of your page, enough for you to make allowances for pagination and hyphenation, and generally tidy up your text without wasting paper. The first time you do a test print, the Primary Print Options appear just as they do for a normal print.

Once you have selected your Primary Print Options, you will see the message:

LEFT EDGE OF SCREEN AT COLUMN 10

"Column 10" refers to the "LEFT MARGIN" of the Primary Print Options. It means that, if the Primary Print Options "LEFT MARGIN" figure is set at 10, then that is the position on the printer where the page will start to print. As the screen is also starting at column 10, the first character of the printed page will appear at the left edge of the screen.

You can change this figure, so that your screen doesn't start from the edge of the page. It's a good idea to experiment with changing this figure, so you can see the effect of different figures. If the figure is acceptable, press RETURN. The screen will go blank for a few moments as the text is formatted. You will see your formatted text, or the edges of it. You can now read it at your own pace, by pressing the spacebar to scroll it on the screen. The cursor will usually be at the lower right of your screen as you scroll. If your document is longer than a page you might notice the cursor move to the lower left of the screen, which will mean you are at the end of a page. You can return to Edit Mode at any time by pressing R. If you are happy with your document, make sure you save it to disk before printing it.

Printer Checklist

There are a large number of different printers. They all perform much the same function, but the quality of the print and the speed of the output will vary enormously. There are a few rules to follow with all printers:

1. Know which slot your printer is connected to. There are a number of slots inside the Apple. The printer is usually in slot 1.

2. The printer will usually have a separate power switch from the computer. Virtually the only exception to this is the Apple "Silentype" Thermal printer. Always ensure that the printer is turned on when you want to use it, and that it is turned off when the computer is turned off. It sounds simple, but it's so easy to forget.

3. The printer will probably have an "On line" switch. This switch must be on for the printer to print, but it can be off when the printer itself is still turned on.

4. The printer will probably have "Line Feed" and "Form Feed" switches. Wherever possible, use these switches to draw the paper through. Manual positioning of paper on tractor feed printers can sometimes cause damage. These switches will usually only work when the printer is "Off Line".

5. The printer may have friction feed or tractor feed, or both. Ensure that you are using the right sort of paper for that printer, and that you have told SANDY whether you are using continuous stationery or cut sheets (STOP EVERY PAGE Y/N in the Primary Print Options).

6. If your printer stops, or does not work for any reason, check that the paper is correctly inserted, that it is online, that the ribbon has not run out, that the lid is correctly closed, that the print head is correctly positioned. No two printers are exactly alike. Take the time to acquaint yourself with your printer, it is well worth the effort. All printers come with manuals, which vary immensely in quality. (Usually the printer manuals are not good.)

7. If the printer appears to stop for no reason, press the spacebar. You might have put a "stop" character in your text.

8. Know what sort of interface your printer uses. There are two main sorts: Serial (sometimes called "RS-232"); and Parallel (sometimes called "Centronics"). The difference between them is not important, but they are completely incompatible. Some printers have both types of interface. If you are using a serial interface, ensure that the BAUD rate settings are correct. There are switches on the interface card and on the printer (often inside the printer) to set the BAUD rate. Printer and interface must be set at the same rate.

9. On some printers there is a "Pitch" setting, allowing you to alter the pitch (number of characters to the inch). This is usually set at "10".

10. If the printer is printing too many (or too few) lines you might find that a switch on the printer or the interface needs setting. On rare occasions you might have to replace your interface card.

11. If the printer is ejecting or page feeding at the wrong place, first check that your paper is correctly inserted and properly aligned, and that it is the correct length of paper according to your "PAGE LENGTH" command. If it appears okay, it is possible that your intelligent interface is being "too smart", and sending ejects of its own.

12. If the printer doesn't print what you typed, you could have a non-standard daisy wheel, or the switches could be set to a non-standard alphabet. This can also happen sometimes if you have selected the wrong BAUD rate.

BAUD RATES

Chapter Ten

The Glossary

The "Glossary" feature of SANDY allows you to quote commonly used words, phrases, paragraphs, or documents without having to type them all each time you wish to use them. When you boot SANDY, a text file on the program disk called "GLOSSARY" is automatically loaded into memory. This glossary file contains up to ninety six phrases, most of them embedded print commands. You can add phrases of your own to this file, or make a completely new glossary file. Then, when in Edit Mode, you need only type the code letter for that glossary item to have it appear on the screen.

Quoting Glossary Items

Glossary items are quoted by pressing [J][Q] when in Edit Mode, followed by the glossary item code. For alphabetic glossary items, it does not matter if the glossary item code is typed in upper or lower case. If you have accidentally created a glossary that contains two items with the same code, the first of these will be quoted, i.e., the one closer to the beginning of the glossary file. If you quote a glossary code that does not exist in the currently loaded glossary, then the error message

GLOSSARY ITEM MISSING!

will appear.

The Glossary File

The glossary file is a normal text file, and can be created or edited like any other text file. You can load it into memory and look at it. Do so now, if you haven't already done so. To be used as a glossary it must follow certain conventions:

1. The file must be called "GLOSSARY"

2. Each item in the file must consist solely of the code character in curly brackets { }, followed by the item in curly brackets. Any characters may be contained within the curly brackets, including a RETURN. Only a closed curly bracket followed by a RETURN is not allowed, as this is the sign to SANDY that the glossary item is finished.

If that prescription sounds totally obscure don't worry, just look at the example on the screen and do your entries in the same style. See tutorial three.

3. There must be a RETURN between each glossary item.

4. Any character may be used as a glossary code. Because it is difficult to remember too many items, and because it is cleaner, it is best only to use as glossary codes the 26 alphabetic and 10 numeric characters.

5. There is no limit to the size of each glossary item, except that the maximum size of the total glossary, including code characters and curly brackets, is 4,096 characters.

The text file called "GLOSSARY" on the SANDY program disk will show you a small sample glossary. When you look at it you will notice that most of the items are Embedded Print Commands. These are very handy things to put into the glossary, as they are used repeatedly. With the glossary, it is not necessary to type in the whole Embedded Print Command. You will notice that some items, like item "E", ".EJECT" are followed by a RETURN, and others like item "N", ".NEEDS" are not. This is because ".NEEDS" needs a number before a RETURN and ".EJECT" does not.

Experiment with your own glossary. Individual items can be quite large, allowing you to incorporate a number of standard paragraphs or addresses. You can also have as a glossary item a whole string of Embedded Print Commands that will overwrite your Primary Print Options. If you incorporate this string before every letter you want in a certain format, you will not have to worry about changing your Primary Print Options each time you want a letter in that format. The glossary can be a very powerful feature. If you do create your own glossary file, it is probably a good idea to incorporate the same Embedded Print Commands that are used here, as they are an integral part of SANDY.

Changing the Glossary

There are two ways to change the glossary:

1. Changing the glossary file on the SANDY disk.

The file called "GLOSSARY" on the SANDY program disk automatically loads into memory when you boot the program. If you want to change the contents of this file, you must first remove the write-protect tab from your SANDY disk. Then load the file "GLOSSARY", make the changes or additions you want in Edit Mode, then save the file back onto the disk, still calling it "GLOSSARY". Alternatively, you could create a file from scratch and then save it onto the disk. As long as you call it "GLOSSARY" it will overwrite the previous "GLOSSARY" file, and provided the file is in the right format, SANDY will use it as the glossary.

Before you can use a new glossary file, it must be loaded into memory by rebooting or using the G (for "Glossary") File Command (see below).

2. Putting another glossary into memory.

You do not have to follow the above procedure to change the glossary in memory. If you want a different glossary file, you can create one and keep it on another disk. Remember to use the correct format, and to call the file "GLOSSARY". Do not try to put more than one glossary file on a disk, or one will be erased. To replace the glossary in memory with another, type G from File Command Mode. This will load the file called "GLOSSARY" from the disk in the currently logged disk drive.

This way you can have as many different glossaries as you like for any purpose you like. The one that is on the SANDY disk will load when the disk is booted, or you can load any other glossary at any time. As with every aspect of SANDY, practice makes perfect, so try a few glossaries of your own.

If you boot SANDY and there is no glossary file on the program disk, the message

GLOSSARY FILE NOT FOUND

will appear. Press any key to continue. SANDY will operate as normal, except that if you attempt to use the glossary you will get the message "GLOSSARY ITEM MISSING".

Chapter Eleven

Mailing and Labelling

SANDY assists you with several functions related to the creation and maintenance of a mailing list. It will print out labels, send identical letters to a number of different people with their names correctly inserted, and sort these lists in a number of different ways.

Format of a mailing list:

There is a sample mailing list on your SANDY disk, called "MAIL LIST". It is a normal text file and is created and edited in the same way as any other text file, but to be used as a mailing list it must follow certain conventions. The file "MAIL LIST" will illustrate these conventions. They are:

1. The first line of the mailing list must be a number, which should be the number of different fields contained in each mail list item. A field is a name, an address, a postcode, etc. The whole address, consisting of all the fields, is called a record.

2. The number must be followed on the next line by the name of each field, one to a line.

3. Each record must contain the same number of fields.

4. If for any reason a field must be left blank, put at least one blank space (spacebar) before the RETURN at the end of the line. This is not absolutely necessary, but makes some errors easier to correct.

5. Every record, including the first "naming" record, must be separated from the following record by an empty line, consisting solely of a RETURN.

6. There is no maximum to the number of fields in each record.

7. There is a maximum of 256 characters in each field.

8. There is a maximum of 1,024 characters in each record.

If the start of your file does not follow these requirements you will get the error message:

THIS DOES NOT LOOK LIKE A SANDY MAIL LIST.
NOR DOES IT LOOK LIKE A DIF FILE.

CONTINUE Y/N?

The usual problem causing this error message is you have forgotten to specify the number of fields, or you have left an extra carriage return at the top of the list.

If the body of your mail list file does not follow these conventions the mailer and labeller will print out the offending sections. Some other mail list utilities will not print out offending sections. They will simply say
INCONSISTENT NUMBER OF FIELDS!
and halt.

We have provided an example of a mail list, which we have called "MAIL LIST". It is on both the front and reverse sides of your SANDY disk. If you examine"MAIL LIST" you will find it much easier to understand these conventions. When

you create your own mail list you simply do it in the same style as "MAIL LIST". You can call your fields anything you like and have anything in them, as long as you maintain consistency. You can have your fields in any order, though usually you would follow "STREET ADDRESS" with "CITY", for example. Just make sure they are in the same order in all the records in your file. It is often a good idea to put your postcode or zip code in a field of its own, so that you can sort your list by this field to take advantage of bulk mailing rates.

You will notice that one of the fields in "MAIL LIST" is "DONATION". Fields need not just be components of a name or address, they can be any other sort of item you may wish to incorporate into your letter. You will probably have a particular format of your own, depending on the nature of the work you wish to do.

Use of a Mailing List

Any file you create as a mailing list, using the conventions outlined above, can be manipulated by a number of programs on your SANDY disk. To use these programs you must "RUN" them. When in File Command Mode, type:
RUN filename

and the desired program will run. There are three such programs; "MAILER", "LABELLER" and "SORT MAIL LIST". You do not have to run the program from within SANDY. You can boot with your DOS 3.3 SYSTEM MASTER disk or any other disk that contains DOS, then RUN any of the programs. They will all ask you for the name of the mailing list file. You can also enter basic by typing CTRLC twice when in edit mode, and then type the RUN command.

MAILER

This example will show you how to use the "MAILER" program, which allows you to have information from a mailing list inserted into the body of a letter.

LOAD the file called "BEGGING LETTER" on the reverse of your SANDY program disk.

Put the cursor at the top of file.

Scroll down through the document. Notice the special character, the inverse "]". The number after this character tells the "MAILER" program which field to pick from the mailing list. This character is an embedded control character that should be used only for this purpose. You get it by typing CTRL]. Try inserting this character for yourself now, then delete it to leave the letter just as it was.

BEGGING LETTER

Go to File Command Mode.

Type **RUN MAILER RETURN**. You should see the following display on the screen:

```
MAILER now present

Version 1.5 14th June 1982


To interrupt type C [not CTRLC)
To restart type RUN

Place the disk with the mailing list in
drive 1, then press return
```

Press RETURN, as the mailing list (we are going to use the sample file "MAIL LIST") and the BEGGING LETTER are both on the same disk, the the SANDY program disk. If your mailing list was on a different disk, you would put that disk in drive 1 before pressing the RETURN.

Type the name of the mailing list, in this case "MAIL LIST". If you press RETURN at this point, the disk in Drive 1 would be cataloged.

Check that your printer is ready to print.

Check the Primary Print Options, as you always do when you print out a letter.

You will then be asked **ENTIRE FILE? Y/N**. Answering Y will print the entire file, inserting the correct items in the correct places in the file "BEGGING LETTER". If you answer N, you will be taken through a number of selection criteria, which you can answer as you need:

UPPER LIMIT and LOWER LIMIT may be numeric or alphabetic, and may consist of a single character or an entire field. To select by zip code, for example, the zip code must be on a line by itself. Similarly, if you want to select items by surname you must have the surname on a line by itself in your mailing list.

You will now see "BEGGING LETTER" reproduced on your screen. The inverse "]" symbols will be replaced by fields from "MAIL LIST". After they are all replaced, the letter will be printed. "MAILER" then gets the next entry from "MAIL LIST", inserts the correct fields, and prints the next letter, and so on to the end of the list.

When you are happy that it works, type **C** (not CTRLC). The program will stop and leave you in basic.

At this point you can restart the MAILER by typing RUN, or run the labeller by typing RUN LABELLER.

To return to SANDY you must boot the program disk again, by putting your SANDY disk in the drive and pressing Ctrl Reset.

You should now be able to use "MAILER" yourself. Try it. Type in a letter of your own, demanding money. Use "BEGGING LETTER" as a guide, and use the existing "MAIL LIST". Then try creating a mailing list of your own. The only trick to it is to ensure that your mailing list is consistent, with the same number of fields in each entry, and that you use the embedded CTRL] character, followed by a number, to indicate which field of your mailing list goes into that particular spot in the letter.

When you prepare your own mail list you should try it with LABELLER before you try it with MAILER, because with LABELLER it will not take as much time and paper to discover that you have done it wrong.

LABELLER

The "LABELLER" program allows you to print the information from your mailing list onto any type of standard label. The following example will show you how it works:

From File Command Mode or basic, type **RUN LABELLER**. You will now see the following display:

```
Labeller now present

Version 1.4 29th April 83

To interrupt type C (not CTRLC)
To restart type RUN

If you receive incomprehensible error
messages they will usually be explained
in the manual. The usual cause
is additional or missing lines.
An additional line at the end
of the mailing list will cause the
error message "END OF DATA", as the
Labeller looks for the next field and
does not find it.
```

Press RETURN. You will now be asked for the name of the mailing list. Type **MAIL LIST RETURN**. Of course, you type

whatever the name is of the list you are using, and you must ensure that the disk that contains it is in the disk drive. Pressing just a RETURN, without a file name, will catalog the disk.

Press RETURN several times to accept the default answers to the ENTIRE FILE?, TAB, NEW LINE, NAME, ADDRESS, CITY, ZIP, and LAYOUT CORRECT? questions. Answer N for DONATION and DATE, as you don't want them to print on your labels.

Answer **2** to the NUMBER OF LABELS ACROSS question. You can print as many across as you like, but two is the usual maximum on label stationery. You will now see the following display:

LEFT MARGIN	3
LABEL WIDTH	30
LABEL HEIGHT	9
PAUSE EVERY	5000 ROWS
COPIES	1
PRINTER SLOT	1
PAGINATE Y/N	N

[LABEL HEIGHT AND WIDTH ARE IN SPACES AND LINES, AND INCLUDE THE GAP BETWEEN LABELS]

Press RETURN to accept the default value for the left margin ("3"). Change the "LABEL WIDTH" to **36** characters, and the "LABEL HEIGHT" (number of lines between the first line of each label) to **6**.

If you make an error or change your mind you can move to the item you wish to change by using the arrow keys.

The next question enables you to determine how often you want the label printing to pause, to check the alignment for example. For now, press RETURN to accept the default value, since our example has only a few labels.

You can print on labels if you want, but for now we will print onto plain paper. Many people always use paper, then copy the labels on a plain paper copier, so that they can re-use the original.

"COPIES" refers to the number of copies of each label you want, and "PRINTER SLOT" refers to the slot the printer is in. Both of these are usually "1". If so, press the space bar to start printing.

The labels then start printing, with dummy labels in the desired format. If the "IS ALIGNMENT CORRECT?" question is answered with the default value of Y, the printer will continue printing labels, otherwise you will be sent back through the layout options again. When you come to print on real labels, you may have to experiment a bit to get exactly the right format.

Using Databases with Sandy

If you have a mailing list of moderate size, or a small database, then SANDY will be adequate for most purposes. If, however, your database is large (more than a few hundred items), and you wish to make extensive or sophisticated use of it, then you will need to buy a data base program.

Most (but not all) database programs can generate **DIF** files

SANDY accesses the information in databases through DIF files, just as you access the information in spreadsheets through PRINT files.

For example: suppose that you run a business and you have everyone who owes you money on a database. You could tell your database to create a DIF file containing the names, addresses, and amount owing of everyone who is more than thirty days overdue. You could then use the program on your SANDY disk, called MAILER, to send a reminder letter to everyone in the DIF file., or to everyone in the DIF file who owed more than a certain amount. See the chapter in your manual "MAIL LIST and LABELLER".

The labeller and the mailer can use DIF files in exactly the same way as they use SANDY mailing list format files.

To try this out: go through the example in the manual, using MAIL LIST DIF instead of MAIL LIST. You will find these files on the reverse side of your SANDY disk.

MAILER DIF is exactly the same program as MAILER, and LABELLER DIF is exactly the same program as LABELLER. We provided them under two different names to remind you that they can access two different formats.

Sort Mail List

This program allows you to sort your mailing list into a different order from that in which it was originally compiled. You can sort by any field. The "SORT MAIL LIST" program should be on the same disk as your mailing list. In the example below, using your SANDY disk, they are on the same disk. If, when you use the program to sort your own mailing list, your list is on a different disk, this is the procedure:

Boot DOS and then put your SANDY disk in the drive.

Type **LOAD SORT MAIL LIST**. This will get the "SORT MAIL LIST" program from the SANDY program disk and load it into memory.

Remove the SANDY disk and replace it with the disk containing your mailing list.

Now type **SAVE SORT MAIL LIST**. This will put the program onto your data disk. It is a good idea to put "MAILER" and "LABELLER" on your disk too, to avoid changing disks. Now proceed as below.

Make sure that your mailing list is in the correct format. If you get an error message try your mailing list on the labeller. Its error messages tend to be more informative.

The item to be sorted must be in a field by itself. For example, if you want to sort by zip code, you must have a field in each record for zip code only. The same applies to surnames, or to any other item.

Here is an example of how to use "SORT MAIL LIST":

After booting SANDY (or from DOS), type **RUN SORT MAIL LIST RETURN**.

You will be asked the name of the mailing list. Type **MAIL LIST RETURN** for this example. If you just press RETURN, the disk will be cataloged.

After the file is loaded you will see a menu of the fields contained in the file. The program is asking you which field you want the file sorted by. Before answering this question replace the disk with another initialized disk. This is the disk that the sorted mailing list will be saved onto.

MORE SAMPLE LETTERS
MRS SMITH-JONES...

Type **5 RETURN**, to sort by the "DONATION" field. the program will now begin sorting. The time taken will depend on the number of records. Three hundred records take about two minutes.

When the sort has finished, the new list will be saved onto disk under a new name, in this case "MAIL LIST.SORT5". The suffix ".SORTn" will be added to the name of your old file, where "n" stands for the number of the field that was sorted.

One final menu will be displayed allowing you to:

1. Sort the same file using a different sort field.

2. Sort another file.

3. Quit the program.

You may now use the sorted mail list as though you had keyed it in originally.

To return to SANDY you must reboot the program disk by pressing Ctrl Reset.

Mail LIst Continue

The file "MAIL LIST CONTINUE" gives an example of how the .CONTINUE command is used to link mail lists. Examine this file with SANDY if you wish to see how to link mail lists.

Mailing List Maker.

This is a simple program to enable you to make mailing lists in SANDY format. Mailing lists made by this program can be sorted by SORT MAIL LIST, provided that they are not longer than about 20000 characters. This simple program merely allows you to create and add to mail lists. It does not allow you to delete or correct mail lists. For that you must use SANDY.

This program is not a database program. It is intended so that someone unfamiliar with SANDY can type a long list of names and addresses into the computer. That is all.

When you RUN MAILING LIST MAKER, you will see the screen:

```
SANDY MAIL LIST ENTRY PROGRAM
-----------------------------

THIS PROGRAM ALLOWS YOU TO CREATE
MAIL LISTS TO THE FORMAT REQUIRED
TO RUN UNDER SANDY'S PROGRAMS

LABELLER MAILER

SORT MAIL LIST AND

POSTAL GROUP SORT



HIT RETURN TO CONTINUE
```

The program will then ask you whether the file already exists or not. If the filed does not exist then it will ask you the number of fields and the name of each field. If you were to say five fields: name, street, city, state, and ZIP CODE, then the screen would show:

```
SANDY MAIL LIST ENTRY PROGRAM
-----------------------------


NAME OF FIELD #1 NAME
NAME OF FIELD #2 STREET
NAME OF FIELD #3 CITY
NAME OF FIELD #4 STATE
NAME OF FIELD #5 ZIP CODE
```

You should keep your field names fairly short, as they are in this example. If you do not the screen display may become confusing.

If you answer that the file already exists then it will pick up these values from the file, so you will not see a screen like the above screen.

It will then ask you the filename, and the drive on which file is located (or is to be located.)

It will then ask you to type the first record (note that record one is not the first record in the file, just the first record that you type in that session, similarly record two is the second record in that session, and so forth.

You will see a display something like this:

```
ENTRY NUMBER 1

NAME
STREET
CITY
STATE
ZIP CODE

HIT RETURN ON FIRST FIELD TO END
```

But with your own field names. (The field names given are only for example. You will probably have different field names.)

The cursor will sit at the start of the first field, which in this case is "name". You type in then name then hit carriage return. The cursor will then position itself to the start of then next field, in this case is street.
When you have typed the last field the screen will then say "ENTRY NUMBER 2", and you type in the next record.

The rule for editing fields is the same as for file names. To correct errors backspace with the left arrow. Only the stuff between the cursor and the start of the line is kept, so if you have just corrected a typo you should then move forward with right arrow before hitting carriage return.

Once you have hit carriage return you cannot correct an entry, so just mark the list that you are typing from, and then later you can correct it using SANDY.

To exit the program just keep on hitting carriage return.

To re-enter the program after exiting it deliberately or inadvertently type RUN followed by carriage return.

You should always exit the program. When you exit the program the last part of the file is saved to disk. If you simply turn off the computer the last part of the file will simply be lost. So when you want to stop do not simply turn off the computer or boot another program. Exit the program properly by hitting carriage return several times.

If you want to type a null field, for example one of the fields is telephone number and you have not got the telephone number then hit the space bar, then hit carriage return.

It will often happen that a field is too long for screen space and overflows onto the next line. For example if the name was "Johnson's Splendid Perfumeries, America, Incorporated" then, in the above example, the name would overflow onto the street field. Don't worry about it. Just keep on typing as if your screen was wider than it is. When you enter the street field you will overtype the last part of the name, but do not worry. The computer still remembers. The maximum field length is 254 characters, but we did not allow 254 characters on the screen. It looks as if it overflows and gets overtyped, but really it does not. So you can enter fields of any length, up to 254 characters, even though the display will not look right. I repeat: After you hit carriage return the end of a long field will appear to be truncated, but really it will not be truncated.

Inevitably, when typing in a long list you will make errors, and, once you have hit carriage return, you cannot go back and correct them. Note the errors when you make them. To correct the errors boot SANDY, load the mailing list, then edit it like any other file. After you have edited it do a dummy run with the labeller, to make sure that you have not mucked the format. Each record must have the correct number of fields. You can also use SANDY to add .CONTINUE statements to the end of mailing list.

Chapter Twelve

Control Characters and Control Codes

You might have noticed that when you attempt to type a shifted character, for example a capital "P", and you accidentally press the CTRL key instead of the SHIFT key, an inverse "P" comes up on the screen. You also might have noticed that when you attempt to print a file containing such inverse characters the characters do not print, and strange things may happen.

If you have not noticed this try it and see what happens. These inverse characters are called "Control characters". They cannot be printed, but sometimes they tell the program or your printer how you want things printed.

Each control character has a name, usually an unpronounceable one. In your printer manual these characters may be referred to by name, or by their ASCII code. On the following page is a table that allows you to translate between one and the other.

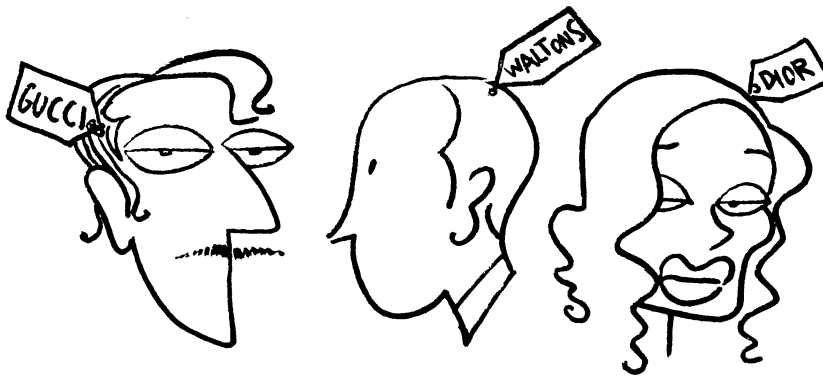
So if your printer manual talks about ETX you will just look up this table and discover that ETX is Ctrl C, and that character 7 is Ctrl G.

The column labelled HEX is the character code in hexadecimal, and the column labelled DEC is the character code in decimal. If your printer gives you examples in which they refer to CHR$ then they are using decimal. For example CHR$(27) is ESC.

If your printer manual uses hexadecimal they will tell you they are using hexadecimal or "hex".

Most control characters, in particular the very important ESC, can be entered in your text by simply typing them, but the ones corresponding to the arrow keys or tab cannot be entered in this way, for obvious reasons. To enter them you must use the edit command ◑**E**, followed by the letter corresponding to them. For example, to embed a CTRLH into your text, enter ◑**E H**. See "Common Problems with Printer control characters".

Remember, control characters are not printed, they are absorbed by the printer. But depending on your printer, they can control the way that text is printed.



SPECIAL FEATURES FOR PROGRAMMERS

Control character table

Hex	Dec	Name	Char	To enter type:
00	0	NULL	CTRL @	CTRL @
01	1	SOH	CTRL A	CTRL A
02	2	STX	CTRL B	CTRL B
03	3	ETX	CTRL C	CTRL E C
04	4	ET	CTRL D	CTRL D
05	5	ENQ	CTRL E	CTRL E E
06	6	ACK	CTRL F	CTRL F
07	7	BEL	CTRL G	CTRL G
08	8	BS	CTRL H	CTRL E ←
09	9	HT	CTRL I	CTRL I
0A	10	LF	CTRL J	CTRL E J
0B	11	VT	CTRL K	CTRL E K
0C	12	FF	CTRL L	CTRL L
0D	13	CR	CTRL M	RETURN
0E	14	SO	CTRL N	CTRL N
0F	15	SI	CTRL O	CTRL O
10	16	DLE	CTRL P	CTRL P
11	17	DC1	CTRL Q	CTRL Q
12	18	DC2	CTRL R	CTRL R
13	19	DC3	CTRL S	CTRL S
14	20	DC4	CTRL T	CTRL T
15	21	NAK	CTRL U	CTRL E →
16	22	SYN	CTRL V	CTRL V
17	23	ETB	CTRL W	CTRL W
18	24	CAN	CTRL X	CTRL X
19	25	EM	CTRL Y	CTRL Y
1A	26	SUB	CTRL Z	CTRL Z
1B	27	ESC	CTRL [	ESC
1C	28	FS	CTRL \	CTRL \
1D	29	GS	CTRL]	CTRL]
1E	30	RS	CTRL ^	CTRL ^
1F	31	US	CTRL _	CTRL _

We will now look at some of the more important embedded control characters. These are not sent to the printer (except by means of the ".REDEFINE" command - see below). SANDY treats them as instructions on how to format the line of text they appear.

Soft Space

This is the most important of the special control characters. It is the same as Ctrl_ It is displayed on screen as an inverse plus sign, "+". You can enter it by holding down the control key and typing -. This character automatically spreads out to occupy as much space as possible, thus right justifying the line.

For example, if you type Chapter 7 Ctrl_ Page 48, it will appear on the screen as "Chapter 7 + Page 48", but when it prints on paper (or on screen during a test print) it will right justify the "Page 48", so that "Chapter 7" stands against the left margin, and "Page 48" stands against the right margin. It "spreads" the line at the position of the soft space. Try it.

Similarly, typing Ctrl_ CHAPTER 7 Ctrl_ will appear on screen as "+CHAPTER 7+", and will result in the "CHAPTER 7" being centered.

So: if a line consists of a soft space, a phrase, and another soft space, then that phrase will print in the centre of the line; and if a line consists of a phrase, a soft space, and another phrase, then the first phrase will be left-justified and the second phrase right-justified. This can be very useful for headers and footers. It is also useful for some types of column heading, for example a table of contents.

You will usually want headers right justified, so you should start them with a soft space. You usually want footers centered, so you start and finish them with a soft space.

Hard Space

The "hard space" prints as an ordinary space, but SANDY won't attempt to stretch this space when it is right justifying, nor will it break the line at that space. To enter a hard space type Ctrl@ instead of the space. Ctrl@ is the same as Ctrl2 on this keyboard, and appears on the screen as a solid block.

Use the hard space when the space is part of the text on either side, such as the metric way of writing large numbers: a million is 1 000 000, not 1,000,000.

Soft Hyphen

A "soft hyphen" is put into a long word to split the word at the end of a line. It displays, but prints only if it is needed for a smooth right margin. To enter a soft hyphen type the syllable which is to precede the hyphen, then Ctrl ^ , then the rest of the word. Ctrl ^ is the same as Ctrl6 on this keyboard, and appears on the screen as an inverse hyphen.

If you have a long word, for example "antidisestablish-mentarianism", it may muck up your paragraph when you print it. If it does, you should enter soft hyphens wherever you think it might be a good idea to hyphenate it. Type antidisCtrl6establishmentCtrl6arianism. This will appear on screen as "antidis-establishment-arianism". These hyphens are not printed unless the word needs to be broken, in which case a hyphen appears at the point where the word is broken.

A soft hyphen is a way of telling the word processor that it can hyphenate the word at that point if it needs to. It does not mean that it MUST hyphenate the word.

Underlining

If your printer has a physical back space capability, then CTRLU switches underlining on (or off). To enter a "CTRL U" in your text type ◑E **U**. It will display as an inverse U.

If this doesn't do an underline your printer manual might help - there are sometimes other methods of underlining. The Epson and many other dot matrix printers use a method of underlining that is illustrated by the file "DOT MATRIX UNDERLINE" on the reverse side of your SANDY disk. If you have a dot matrix printer, load this file and print it. If it prints correctly then you can use that method for underlining, imitating the method used in that file.

STOP PRINTER

Often it is necessary or desirable to stop the printer at a particular spot in the text, to insert information or change a daisywheel, for example. In this case you can embed a "CTRL S" in the text, simply by typing CTRLS at the desired spot in the text. The printer will then stop when it reaches this point. Pressing the spacebar will cause it to continue; any other key you press will be inserted into the printed text.

You can use this feature to insert extra information into your text, for example when inserting monetary amounts into form letters. End your entry by pressing ESC. SANDY does not consider this extra text when it is right-justifying, unlike the "MAILER" program.

"Ctrl S" is also active when you do a test print to screen. Entry of text is possible, but it will not become part of your document, and will vanish when you are back in Edit Mode.

"Ctrl S" is usually used in conjunction with the ".COMMENT" Embedded Print Command. For example, if you wished to switch to a different daisywheel you could, before the "Ctrl S", employ the comment line:

.COMMENT Change daisywheel CTRLG RETURN

It is a good idea to use "Ctrl G" in such comments because these make the computer ring its bell, reminding you to change the daisywheel.

Summary of Word Processor Embedded Control characters.

Effect	Character	Display
Soft space	Ctrl _	Inverse +
Hard space	Ctrl @	Inverse blank
Soft (opt.) hyphen	Ctrl ^	Inverse hyphen
Stop	Ctrl S	Inverse S
Underline on (or off)	Ctrl U	Inverse U

Printer Embedded Control characters.

Any control characters that SANDY doesn't recognize are sent to the printer interface. What they do there depends on your printer and on your printer interface. You will need to consult your printer manual. Most printers react to the "Ctrl G" (bell) and the "Ctrl H" (backspace). On non-dot matrix printers backspace may be used to obtain bold print. Most printer interfaces used with the Apple will not send a "Ctrl I" character correctly. If you have this problem check your printer interface manual. It may document a way round it.

On the reverse side of your SANDY disk you will find a number of sample files that illustrate the control characters for different printers. Load up any files that look appropriate and print them. If your printer is not included you will have to work it out yourself from the printer manual, which is why we included the table of control characters. If you have trouble, ask your dealer to help.

If your printer is not included we would appreciate it if you would make an example file, with your name and address and the make and model of the printer as part of the file, and send that file to us, accompanied by the printout of the file on your printer. For new example files, and improvements on old files, we will pay a small fee. If we get several example files for the same printer only the one actually used will get the fee. The others will have their disks returned with our thanks.

Common problems with printer control characters.

1. Interception of control characters.

If a your printer uses one of the control characters already used by SANDY, it will be intercepted before the printer sees it. To solve this problem use the ".REDEFINE" command (see below), and redefine it to some convenient escape sequence. This problem occurs with underlining on the Epson, see the file "DOT MATRIX UNDERLINE".

Using ".REDEFINE" you can send any control characters whatever to your printer interface, which may pass them on to your printer, but sometimes it will not. Most apple interfaces muck up a control I. If you have this problem check your printer interface manual. It may document a way around it.

2. Two-character escape sequences.

The "Escape" character usually means that the single character following it is to be interpreted as a printer control character. For example, on the Epson printer "Esc E" turns emphasized printing on, and "Esc F" turns emphasized printing off. The "E" and the "F" are normal character but because they are preceded by ESC they are not printed. Instead they act like control characters. This is a "one-character escape sequence".

When SANDY right justifies it allows for the fact that the character following the escape will not be printed. But suppose you have a two-character escape sequence, which some printers need. In that case the two characters following the escape will be absorbed by the printer and not printed, but SANDY thinks only one is to be absorbed, which will muck up right justification. The solution to this problem is to use the ".REDEFINE" command to redefine an escape character to stand for a multi-character escape sequence.

3. Varying print sizes.

Suppose that on your printer "Ctrl N" stands for double size print. You use it to double your print size and your printed page is a complete mess. The problem is that you have to adjust your left margin and page width to compensate for your larger print size; SANDY does not do it for you. If you double your print size you have to halve your page width and your left margin.

4. Trouble entering control characters.

Some control characters cannot be entered into text by simply typing them because they perform some special function. For example, CTRLC quits the word processor.

In such cases you will have to use the ◨E Edit Command. You will need this command in the following cases:

CTRL C	(quit)
CTRL H	(right arrow)
CTRL I	(Tab)
CTRL J	(down arrow)
CTRL K	(up arrow)
CTRL U	(right arrow)

Others may simply not be available on your keyboard. We have placed all the usual problem characters in your glossary. Also, on the reverse side of your SANDY disk there is a file called ASCII TABLE. This file contains every possible ASCII character. If you want a character, control or otherwise, which is not available from your keyboard you can pull it out of this file using the grab command, and put in your glossary.

The ".REDEFINE" command

Of all the Embedded Print Commands, the ".REDEFINE" command is the most difficult. It is quite possible to use SANDY without using this command, but its use is necessary if you are to take advantage of the many special features of different printers. It is a very powerful command, as it lets you easily send any sequence of special characters to any printer, so that any printer will work equally well with SANDY.

With the ".REDEFINE" command you can output any string of control characters with only two keystrokes. Examples of use:

.REDEFINE A ESC B

redefines "Esc A" to be output to the printer as "Esc B". ESC appears on screen as an inverse "[".

This is a trivial example, but it illustrates the principle.

.REDEFINE Z CTRL @

redefines "Esc Z" to be a "NULL". ("Ctrl @" is a NULL, CHR$(0).) Some printers need NULLs as control codes. SANDY will not ordinarily output one if it's embedded in the text, since SANDY considers it to be a non-paddable blank.

To underline on the Epson printer you need the escape sequence ESC- CTRLA. There is no problem, you simply type it in. But to turn off underline you need the escape sequence ESC- CTRL@. Thus to turn off the underlining you need to redefine it as some innocuous escape sequence. This problem is illustrated by the example file on the reverse side of your SANDY disk called "DOT MATRIX UNDERLINE".

You can also use ".REDEFINE" for a long string of control characters. As an example, subscripting on the NEC Spinterm printer requires a very long control character string which can be sent as a single escape code. You should always redefine multi-character escape sequences (where two or more normal characters follow the escape). SANDY thinks that all printers use single-character escape sequences.

A ".REDEFINE" command, as with any other Embedded Print Command, becomes active by printing or test printing text containing it; it then remains in effect for the whole word processing session, or until the escape sequence is redefined to another value. (Useful ".REDEFINE"s can be parked in a ".COMMENTS" section, where the printer never sees them).

The sequence "Esc A" is PRE-defined as "Esc A", and so on to "Esc Z"; you may only RE-define, and only the 26 upper case letters A to Z can be so redefined. Trying to ".REDEFINE" any other escape sequence will give the error message:

ILLEGAL PRINT COMMAND

No escape code can be redefined to the NULL string - nothing at all. If you attempt to do so it will be restored to its original value.

The total number of characters in all the redefined sequences shouldn't exceed 255, or you will get the error message

OUT OF MEMORY

The ".REDEFINE" command is very useful when you have two printers with different control sequences. You can print the same document on each with different .REDEFINEs, which can be kept on disk or in a glossary and loaded at any time.

Note that ".REDEFINE" is only for redefining printer controls. It cannot redefine word processor controls. For example if on one printer you underline using CTRLU, and on another you use ESC- CTRL@, you will have to do a search and replace. ".REDEFINE" will not help you there.

You can now send any control characters at all. CHR$(13), the RETURN character, can't be put into a ".REDEFINE" string, since it is used as a terminator for the sequence. You can always send it anyway, just by pressing RETURN into the text. The only time this will make any difference might be if you're sending graphics data, and have to send a "Ctrl M".

Adding a final "Ctrl J", i.e., CHR$(10), LF or Linefeed, compensates for the word processor losing count of the line numbers. It sees a "Ctrl M", but not a "Ctrl J", even though the "Ctrl J" is a linefeed. The printer absorbs the "Ctrl M" in this unusual case, so the "Ctrl J" keeps it all lined up.

Chapter Thirteen

Advanced Features

SANDY is easy to use, but has a number of advanced features and "Slick Tricks". Some of these are explained in this chapter, along with information that will be useful to people who wish to know a bit more about SANDY than just the basics. If you are a programmer or a serious computer user you will find this chapter especially helpful.

Outline Format

The Outline Format is often needed in word processing, when it is necessary to have a series of statements beginning with numbers or letters, with the body of the statement indented. The ".RELATIVE LEFT MARGIN" AND ".INDENT" Embedded Print Commands are typed as in this example:

.RLM 5
.INDENT -5

Followed by your text, followed by

.INDENT 0
.RLM 0

There is an example of outline format in "SAMPLE LETTER", on the reverse side of your SANDY disk.

The numbers used in the two commands will vary, depending on the number of spaces between the figure and the first letter. You put those first spaces in yourself, then type the text. It will line up OK as in SAMPLE LETTER.

Select the ".RELATIVE LEFT MARGIN" by deciding where you want the body of the statement, i.e. the second and subsequent lines, then adjust the ".INDENT" command to bring the first line even with the other lines in the document.

Remember to reset the ".RELATIVE LEFT MARGIN" and ".INDENT" when you have finished with Outline Format. This technique is illustrated in the "SAMPLE LETTER" file on the reverse side of your SANDY program disk. You leave the required number of spaces between the numbers and the first letter of each paragraph, and the Embedded Print Commands take care of the rest.

Equations, Superscripts, and Subscripts

SANDY has no universal method of superscripting and subscripting, since this facility is printer dependent. You have to embed in your text the necessary control characters to do it. You will need to consult your printer manual and experiment with the control characters and escape sequence appropriate to your printer. For example, on the NEC Spinterm printer to do a superscript you have to set the vertical line spacing to half its normal value, then do a negative line feed, then the superscript, then a positive line feed, then return line spacing to normal. Each of these tasks is done by embedding the appropriate control characters in your text, which can be quite laborious. Of course, once you have the necessary sequence you can incorporate it into a glossary item, so it is no trouble to use.

For scientific equations a much more elegant method is available:

1. Set the vertical spacing on your printer to half its normal value. To do this on the Epson, for example, use the sequence ESCA CTRLF ESC2.

2. When you print the document specify a page length of **132** (twice the normal value of 66), and a line spacing of **2.**

3. Just before an equation appears in the text set the line spacing to one, with the Embedded Print Command **.SPACE 1**. In this example single spacing is in effect half spacing.

4. Immediately after the equation set line spacing back to two, with the command **.SPACE 2**. Double spacing here is in effect single spacing. This method ensures that your equations look almost as neat on the screen as they do on paper.

FILE NOT FOUND

Occasionally you may catalog the disk, select a file, attempt to load it, and receive the error message "FILE NOT FOUND", even though it is listed on the catalog.

This will occur when you have a bad file name. A bad file name can occur for a variety of reasons, but the most common problem is the inclusion of control characters, which you can't see on the screen, in the file name. Recovery is possible, but a little bit messy. If possible forget about that file.

If you need to rescue such a file then you will need your DOS 3.3 manual and your DOS 3.3 System Master disk. Read up about FID (Appendix J in the DOS 3.3 manual).

Using the wildcard option of FID, copy the dud file or files to another disk. Then copy them again to that same disk. The first time FID copies them it will give them the bad file name. The second time it will ask you for new names, as the old file name has already been used. Give them new names. Then you will easily be able to get at the files with the new names.

Printing Envelopes from a Mail List.

Set the "STOP EVERY 5000 ROWS" to "STOP EVERY 1 ROWS".

Looking at Random Access Files

If you are a programmer you may wish to inspect random access files. The difference between random access and sequential text files is explained in the DOS manual. SANDY will load any random access file regardless of its internal structure, provided that the empty gaps between the records are less than 256 characters long. (The file is assumed to finish when it reaches the first completely empty sector). However SANDY won't save random access files; all such files become sequential upon being saved. The random access commands will still work, provided you have not inserted or deleted any characters.

SANDY is able to load random access files because it has a more stringent end-of-file condition than most word processors. This has one unfortunate side effect: when loading text generated by other programs SANDY frequently loads bits of garbage that the other programs consider to be beyond the end of the file. These bits of garbage are separated from the body of the text by a white block (CTRL@). To cure the problem, simply delete the garbage, including the white block, and resave the file. The file will remain perfectly acceptable to and compatible with the program that created it.

Cut and Paste

"Cut and Paste" refers to the writer's method of rearranging text by cutting out certain bits and pasting them in elsewhere. With a word processor you obviously do not have to do this, you can juggle text electronically. SANDY allows you to do this in a number of different ways: you can delete the text and type it in elsewhere, or use the "Grab" function ◑G. The Grab function is the best method, but it works only for bodies of text less than 4,096 characters long.

If you want to manipulate larger pieces of text, you must use the ◑L command and the File Commands. ◑L puts a marker in your text, and the SAVE command will only operate on the text from the position of the cursor forward to that marker, instead of to the end of text.

Let us look at an example. Say you have a large piece of text, and you want to move about 10,000 characters of it to the end of the same text. You put an ◑L at the end of the piece of text you want to move, then move your cursor to the beginning of that piece of text. You then enter File Command Mode, and save that piece of text under a different name. Don't call it the same name as your current file or you will overwrite your original text. Answer **Y** to the question LOWER LIMIT SET. INTENTIONAL Y/N?

Then you return to your original text and delete the text that you just saved. You then move to the place where you want the text to go, and load the text you saved at the position of the cursor.

This is a bit of a long way around. For all but the very longest pieces of text, it is best to used repeated grabs.

Warning: DOS bug

DOS sometimes handles the DISK FULL ERROR message on text files wrongly. This small bug affects any program that generates text files using DOS, not just SANDY. After a DISK FULL ERROR some of the space on the disk may be falsely marked as used, and is permanently lost. The disk in effect gets smaller. Other unpleasant things may happen, but this is the most common.

To detect this problem catalog your disk using SANDY and add the number of sectors free to the number of sectors occupied by each file. There should be 496 sectors on a disk initialized under normal DOS (31 user tracks of 16 sectors each) and there should be 528 sectors on a disk initialized with the DOS that comes with your SANDY disk, i.e., initialized from SANDY File Command Mode (33 user tracks of 16 sectors each). The sectors shown for very long files using standard DOS 3.3 are in error by 256 sectors if the files are longer than that, so that a file of 400 sectors would appear to be only 144 sectors in length. Disks cataloged by SANDY show the lengths correctly.

The magazine "CALL A.P.P.L.E." has a utility program that detects and cleans up disks that have this problem, and there are some others available that do the same thing. If you don't have a utility to fix this, initialize a new disk and copy all your files across to the new disk using FID. Do not use COPY as this will copy your corrupted disk, errors and all. Then reinitialize the corrupted disk.

See your DOS manual, Appendix J, for documentation of FID. It is a very useful program for many purposes. You will find FID on your DOS 3.3 Master disk.

SANDY and Basic

The computer's normal mode is "basic". You are in basic whenever the cursor is flashing next to the] prompt, which is the case when you have no program active in the machine.

From basic you can run basic programs or "BRUN" machine language programs, just as you can from file command mode. You can also do a lot of other things. For complete documentation see your basic manual.

When you exit the word processor using ◪C or CTRLC you enter basic. When any of the utility programs provided with your word processor (such as LABELLER or COPY) finish, they exit into basic.

Use of "EXEC"

"EXEC" is a DOS command that can be entered from File Command Mode. If you type "EXEC" followed by the name of a text file, the effect is the same as if everything in that file was entered in at the keyboard. Its use is fully explained in the DOS manual. Used with SANDY, it is especially useful for editing basic programs.

To edit a basic program from SANDY, follow this procedure:

1. From basic, LOAD your program.

2. Add the following line (it must be the last line of the program):

**63999 D$** = CHR$(4) : PRINT D$; "OPEN FSAVE" : PRINT D$; "WRITE FSAVE" : LIST, 63998 : PRINT D$; "CLOSE"

(There is a text file on the SANDY disk called PSAVE, which you can EXEC instead of typing in this line - it does the same thing.)

3. Type **RUN 63999** RETURN. This should now SAVE your program as a text file called FSAVE.

4. Boot SANDY and LOAD the FSAVE file which you just created. You can now edit the program exactly as you would a normal SANDY text file.

5. When you have finished editing, SAVE your file as FSAVE.

6. Quit SANDY (**C** twice from Edit Mode).

7. Type **FP** to clear the memory.

8. You can now type **EXEC FSAVE** to load the new program, and **SAVE** filename to save it under whatever filename you like. It will once again be a basic program instead of a text file.

Memory Full Error.

When you are handling large documents SANDY may suddenly go ding ding ding, and display the error message "MEMORY FULL ERROR". This means that your document has become too large.

You usually get a memory full error when the free space is very small. The free space is displayed whenever you enter file command mode. The free space is the space left over after your file has been loaded.

When you get a memory full error you should break your file up into smaller files, using the set lower limit command, or use a scratch file (see "handling very large files")

The free space is used as temporary storage for various purposes. When using scratch files you will usually get a MEMORY FULL error when the free space is down to a few thousand. When printing you sometimes get a memory full error when the free space is down to under a hundred (the free space is used as temporary storage when constructing the headers and footers), and when editing without a scratch file (as you usually are) you will get a memory full error when you are down to two or three.

Handling Very Large Files

In normal use, SANDY will handle files of about 24k, the amount of the computer's memory SANDY sets aside for the use of text files. If you want to create or edit a larger file than this, you must use a "Scratch Disk".

When you first boot SANDY you are asked "SLOT AND DRIVE OF SCRATCH DISK". Normally you answer 0 or RETURN or spacebar to indicate that you are not using a Scratch Disk, but if you specify a particular drive then SANDY will use the disk in that drive as an area of extra memory, allowing you to create files up to 130 000 characters in length.

If you use a scratch disk, a warning sign will appear on screen telling you of the dangers of scratch storage. You will also be asked how much space you want to allocate, which will then be reserved on the disk. This area will be marked as "used" by SANDY so that other files will not be saved on top of it. You can save other files on a scratch storage disk, if there is room. It is not a good idea to do this, however, it is best to set aside a whole disk for scratch storage.

When using a scratch disk there are a number of factors to consider and rules to follow:

1. The scratch disk must be a blank initialized disk, or a disk with enough free space to hold your file. Use a blank disk wherever possible.

2. You must never remove the scratch disk until you have finished with your editing and saved your document, since SANDY dumps text onto a large interim file (called "SCRATCH") on this disk.

3. If you are constantly moving around your text, using a scratch disk will be very slow because SANDY will be constantly reading from and writing to the disk. When you move from the top to the bottom of text then SANDY has to place the top part on the disk and read the bottom part from the disk, and similarly when you move in the other direction.

4. Unless you have a good reason for doing so, it is better not to use a scratch disk at all, but to link smaller files together by use of the ".CONTINUE" Embedded Print Command. This makes your files more manageable. When writing a very large document, such as this manual, break it up into chapters or sections. You can continue your pagination throughout, or use section pagination (see the next section).

5. It is possible to forgetfully remove your scratch disk and replace it with another. If you then move from the bottom to the top of text, SANDY will dump the bottom of text onto the disk, into what it thinks to be the scratch storage area, and wipe out any information that was there already. That information could be vital files. It will then load what it thinks to be the top of text from what it thinks to be the scratch storage area. This will of course not be the top of text but instead various bits and pieces from various files. At some point it may, if you are lucky, wake up to the fact that something is wrong and issue the error message:

SCRATCH FILE ERROR
I/O ERROR

and abandon scratch storage, losing most of the file you were working on. If you are very lucky this will happen before the disk that you placed in the scratch drive is totally mucked up.

The moral of this tale is: if you are using a disk for scratch storage leave it in the drive until you are finished. Keep Murphy's law in mind. If you have any vital files back them up - make a copy of those files, or the entire disk, on another disk. And store those back-up disks in a different place. Do not keep them in the same disk pack, or even in the same cupboard.

Accents, Underlining, and Backspaces

The first time you boot SANDY it runs the CONVERT program. One of the questions this program asks you is: "Can your printer do a backspace?"

If your printer can do a backspace, then the file printer capabilities will show various special features of SANDY that utilize the backspace. These features are illustrated by the file "PRINTER CAPABILITIES" that you will find on the reverse side of your SANDY disk.

One of these features is the ability to do accents - those little squiggly things on top of some vowels. French and german need this capability.

If your printer can do a backspace print and read this file.

If you tell SANDY that you printer can backspace it will use the accents, (such as the carat ^) as accents, i.e. it will put them on top of the following letter.

Now if you tell SANDY that your printer can backspace, and it cannot backspace (most dot matrix printers cannot backspace, most fully formed character printers can) then the result will be that when you print an accent the right justification will get mucked up.

So if in doubt tell SANDY that your printer cannot backspace. To reconfigure SANDY for your printer run the convert program again.

Section Numbering.

When printing long documents, such as manuals, it is often advisable to number by section, with each page numbered relative to the start of its chapter or section. For example, the second page of chapter 3 is numbered Chap 3 page 2, rather than page 27.

This makes it much easier to maintain a correct index. When you change a part of a chapter only the page numbers for that chapter are altered. You do not have to rewrite the entire index. Section numbering is only useful if you are writing large books with indexes. If you are just writing modest documents skip this discussion.

To do section numbering you must use headers and footers, and to use headers and footers you must use soft space, displayed as a +. If you are not familiar with this control you should play with it before attempting this section.

Now let us suppose that the header is the chapter title, and the footer is the chapter number and page number.

Then at the end of the chapter you would set the header to null, so that no header would appear on the first page of the next chapter, then an EJECT command to start a new page, then you would redefine the header and footer.

Suppose for example that chapter three is called "Fred eats breakfast", and chapter four is called "Fred goes to work", and that these chapters are in two separate files called "BREAKFAST" and "GOWORK".

Then at the end of BREAKFAST you would have the commands.
.HEADER
(to set the header to nothing - that is to say, to turn off the header, in order that the first page of the next chapter will not have a header on it.)
.EJECT
(to start a new page)
.CONTINUE GOWORK
(to continue the printing with the next chapter)
Then at the start of the next file, "GOWORK" you would have:
The title of chapter four
.PAGE NO. 1
(because this is the first page of chapter one)
.HEADER Ctrl_ **Fred goes to work**
.FOOTER Ctrl_ **Chapter 4, page** Ctrl**P** Ctrl_

On the screen the first section of the new chapter would look like this:

```
 + FRED GOES TO WORK +
.PAGE NO. 1
.HEADER  + Fred goes to work
.FOOTER  +  - Chapt 4, page P -  +
```

This is different from the method used in earlier versions of SANDY in that .PAGE NO. controls the current page, and that you must set .HEADER to null before you start that page.

Setting up Tables Wider than the Screen

If you have a 40 column screen and an 80 column printer, or an 80 column screen and a 132 column printer, then it is a little tricky to set up tables. The important thing to remember is that when you are setting up tables you must end each row with a RETURN. If your table looks okay on the screen but does not print correctly, then you probably left out some RETURNs. Tabs are not relative to position on the screen. They are relative to the last RETURN.

If the header row is not longer than one screen line then there is no problem: the way it appears on screen is the way it will print on paper. But with tables wider than your screen width each row of the table will take up two (or more) lines of the screen. As a result columns will not line up. The screen will look messy, but if you have the tabs lined up it will print correctly. For left justified tabbing (where the start of each row lines up), follow this procedure:

1. Type the header row (the row that contains the title of each column) just as you want it to appear. Don't put in any tabs, and don't worry if you come to the end of a screen line - just keep going. End the header row with a RETURN.

2. Clear the existing tabs. Position the cursor to the start of the header line then press the →| key. The cursor will move to the first tab stop. Press Ⓒ→| to clear it. Repeat until you have cleared all the tabs before the start of the last item in the row.

3. Move the cursor to the start of each item in the header row and set the tab at each position by using Ⓒ→|. If you hear a "blip" that means you just cleared a tab that was already set. No "blip" means that you successfully set a tab stop. The tab stops should now be set up correctly.

4. Using the tab stops you can set up the rest of the table, disregarding the fact that things do not line up on the screen. Move the cursor to the RETURN at the end of the header row, then press RETURN. Then type in the first entry of the second row, then press →|, then type in the second entry of the second row, then press →|, then the third entry, and so forth, until you have done the second row of the table.

5. Remember that each row must end with a RETURN, and each item in each row must start at a tab stop. Now do the third row of the table in the same way.

6. At this point take a look to see what you are doing, by printing it. If it is part of a long document then you do not need to print the entire document, just set lower limit to the end of the table, and position the cursor to the start of the table before you print.

7. The entries in the table should line up correctly. If they do not then some of your lines are longer than the page width that you set, or you failed to end a line with a RETURN, or you did not position the start of each table entry at a tab stop.

8. If they line up correctly you are okay, and you can keep going. If not you will have to find your error and correct it.

The trick in making wide tables is to line things up by tab stop. Do not attempt to line things up by eye if the table is wider than the screen.

Loading Spreadsheet Files

Sometimes you may wish to insert a spreadsheet display, e.g. Visicalc, into a document. This can be done provided that it will fit. If it is too wide it cannot be done.

Spreadsheet programs usually produce four kinds of files:

1. Regular spreadsheet files: The word processor can load and edit these, but only programmers would be interested in doing this. These files are totally incomprehensible to non-programmers.

2. DIF (Data Interchange Format) files: Useful for interfacing most programs to spreadsheets, but useless for word processors. (Except as mailing lists.)

3. PRINT type files: These are specifically created so that you can insert an image of a spreadsheet into a word processor document.

4. Command files. These control spreadsheet behavior. They work in a similar way to EXEC files.

If your spreadsheet program operates under DOS, then it will interface to SANDY.

When you give a spreadsheet program the print command, you get the option of printing the spreadsheet or creating a print format file that contains an image of the spreadsheet. In Visicalc this is called "Print Format". In "THE Spreadsheet" it is called "Print Softcopy".

Read your spreadsheet manual, where it describes the print command. Then when you are using SANDY you can insert this spreadsheet file into your document as you would any other file.

What makes this word processor different?

The great difference between SANDY and other word processors is in what it sets out to do. Most other word processors try to be a secretary. SANDY tries to be a tool.

With almost any other word processor you tell the computer what to do and the computer goes off and does it for you. SANDY's aim is to make you feel that you are doing it yourself.

The approach used by other word processors is usually intended to be "self documenting". For example, with most word processors, if you wanted to copy a segment of text you would pick COPY from a menu, the computer would ask "Copy what?" and then "Copy to where?", and after you'd answered to the computer's satisfaction the computer would copy the segment of text. In practice it never is self documenting, so there is no real advantage to this approach. There is a real disadvantage- you are always having little discussions with the computer; your train of thought is broken again and again.

In SANDY there is no edit command menu, and no copy command either. The aim is to have as few commands as possible, rather than as many as you might ever want. If you want to copy you use the grab command and the cursor movement keys. After a while it's like riding a bicycle - it becomes easy and natural. Because you use only one edit mode you can edit without attending to how you edit. You are manipulating the text directly, and can forget that you are using a computer and a program.

A user-friendly program must, above all else, behave so that it is always clear what it is doing, and so that an error message is clear and direct. You must understand what is going on. Thus the Osborne style of user friendliness (which assumes that the user is to busy to understand) cannot really succeed.

One must aim to make programs that are understandable, not programs that can be used by someone who does not understand them.

We Solicit User Contributions.

You will notice that many of the features described above are not new commands, or new effects of commands. Rather, they are new ways of using commands.

The philosophy that we have used in designing SANDY is to aim for a small number of very simple and general commands, instead of a large number of highly specific commands, and to ensure that you only need a small number of modes, as few modes as possible.

This means that, as with outline format, or legal style page numbering, or section numbering, you need a number of commands to achieve a given effect.

As a result it is sometimes not obvious how to achieve a given effect. There is no specific command, you need a combination of commands. It is a little like very simple programming.

When you achieve an effect that is not obvious and not covered in the manual, or use the program in a way is not obvious, please tell us. We may include your contribution in NEW FEATURES or the next issue of the manual.

Chapter Fourteen

Copying Disks

Many of the data disks you create with SANDY will have vital information on them. It is always possible that a vital disk will at some time be accidentally initialized or lost or chewed up by the dog, or that someone will touch the magnetic surface with fingers covered in pizza and tomato sauce, or that it will be left inside a closed car on a hot day and will melt, or that it will be crumpled by someone trying to force it into a disk drive, or that a faulty disk drive will corrupt it, or that it may simply die of old age or for no apparent reason.

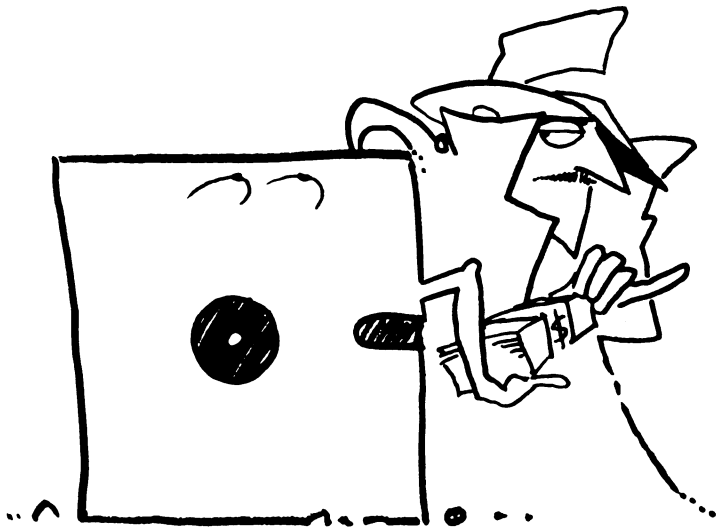
To avoid losing information you must make backups (copies) of important disks. There are a number of ways to do this. Some people go one step further and, with vital disks, use the "son and grandson" system, making a backup of the backup. For example, we keep four copies of the SANDY source code in three different places.

Much commercial software is protected, which means the authors have programmed the disks to resist unauthorized copying. SANDY is protected. However we supply two copies, so that if one dies you still have the other. We will always replace your disks on request for a small fee.

Normal disks, such as SANDY data disks, can be easily copied. You can move some or all of the files from one disk to another using the DOS program "FID" on your DOS 3.3 System Master Disk. The use of FID is documented in your DOS manual. There is also a good copy program, called "COPYA" on your System Master Disk. It is useful for copying entire disks.

SANDY also provides a program for copying disks, so that you can operate SANDY as a complete system without having to use any other disks. SANDY uses a binary program called "COPY". It is a normal file, and so is itself copiable, using FID. "COPY" is a public domain program, it is not copyrighted. It is also better than the "COPYA" program on your DOS 3.3 System Master Disk.

Because "COPY" is a binary program, you have to BRUN it, rather than RUN it.



To back up your disks, follow this procedure:

1. Place the SANDY program disk (or any other disk with "COPY" on it) in the logged disk drive.

2. From File Command Mode type **BRUN COPY RETURN**. The command line will display "BRUN COPY" while "COPY" is loading.

3. When it has loaded you will see the display:

```
COPY ROUTINE

Released to the public domain by Wytand
Written by "Sandy".

Single/dual drive copy

This program copies an entire disk. You
should use it often to make backup
copies of valuable disks.


Drive of source disk? D1
```

The "source disk" is the disk that you will be copying. The destination disk is the disk that you will be copying to. The default value, the one accepted if you press the RETURN, is "1".

If you were to accept all the defaults, by pressing RETURN three times, then your screen would look like this:

```
COPY ROUTINE

Released to the public domain by Wytand
Written by "Sandy".

Single/dual drive copy

This program copies an entire disk. You
should use it often to make backup
copies of valuable disks.



Drive of source disk? D1
Drive of destination disk? D2

Initialize? N
[New disks must be initialized.]
```

The information on the disk in drive 1 would be copied onto the disk in drive 2. The information that was originally on the disk in drive 2 (if any) will be overwritten and lost.

Instead of accepting the default values you can type in a different value. In particular, it is possible to have the same drive for both source and destination, which you would want if you have only one disk drive. In that case the COPY program will ring a bell and ask you to insert the source disk, read part of the source disk, then ring a bell and ask

you to insert the destination disk, write to the destination disk, then ring a bell and ask you to insert the source disk again... and so forth, up to four times. Be VERY careful that you insert the right disk at the right time.

If you get an "I/O ERROR" message while reading your source disk this might mean that your source disk is physically defective, or has been corrupted by a faulty disk drive, or that your disk is okay but the drive is faulty and cannot read it, or that your disk has failed to seat correctly, or that you failed to close the disk drive door in time.

If you wish to ensure correct seating, close the disk drive door after the red "IN USE" light at the front of your disk drive comes on. This is a good practice with any program, not just with COPY. (But never open a drive door while a disk in that drive is being written to, as that may corrupt the disk.) If your disk still will not copy try a different disk drive, if possible.

If that still does not work then you probably have a faulty disk. If your disk is faulty copy all the files that you can from it onto other disks, file by file, and then reinitialize the disk or throw it away. If your disk has a physical fault, for example if someone has touched the magnetic surface with greasy fingers, or cigarette ash has gotten inside, then it should be thrown away. It may however merely have been corrupted, for example by some one opening the disk drive door while the disk was being written to, or the disk was written to by a badly out-of-alignment disk drive, in which case the disk will be OK as an empty disk after you reinitialize it.

If you get an "I/O ERROR" while writing then it may be any of the above problems, or it may be that the disk that you are writing to is a new disk. You would get an "I/O ERROR" because new disks need to be initialize before they are used for the first time.

Chapter Fifteen

Troubleshooting

Occasionally when using SANDY you may find that you get into trouble, or that things do not work as you think they should. If this happens, there are a few simple rules to follow that will often get you out of your difficulty.

1. Don't panic. Remember, there is very little real damage you can do. It is virtually impossible to damage the computer. The worst that may happen is that you will lose your data, or possibly your program disk will be erased. You are provided with two copies of your program disk just in case. To replace erased or damaged program disks, contact your dealer or SANDY Troubleshooting Office. (Address at the end of this Chapter).

2. Read the manual. Use the Index to find the relevant section of the manual, and any other section that seems relevant to your problem. Many problems with SANDY have to do with the Embedded Print Commands and the use of different printers. Both of these chapters in the manual have a special checklist at the end of the chapter detailing some of the more common problems that may occur (See Chapters 8, 9 and 12).

3. If you can't work it out, reboot the system. Very occasionally the computer goes down (hangs, dies, ceases to respond at all) for no apparent reason. If this is the case, it may point towards a few problems:

* A hardware problem: get your machine checked out by a reputable service department.

* A corrupt disk: use your other disk and get your original disk replaced.

* Static electricity: in certain environments this can be a major problem, particularly in wintertime or during dry weather. The best way to prevent the build-up of static electricity is to install an anti-static mat beneath the desk, computer, and chair you are using. A humidifier in the office also helps, as does anti static spray. A static shock that is hardly noticeable to a human will send a personal computer round the bend. A static shock that is painful to a human may permanently damage a personal computer

4. If you are still experiencing difficulties, consult your dealer. It may be something simple that he has come across before.

5. If all else fails, contact SANDY troubleshooting office. Either save the document and send us the disk, or print out the document and send it to us. If you print it out, first put a space before each embedded print command, and mark in any embedded control characters you are using.

If you do send us the document, write an explanation of what you are trying to do and what is happening.

Our address is:

SANDY TROUBLESHOOTING OFFICE
Wytand Pty Ltd
60 Gollan Ave
Dundas NSW 2117
AUSTRALIA

Or call the SANDY HOT-LINE during normal business hours on:

Telephone (AUSTRALIA) (02) 630 3807
(INTERNATIONAL) 61-2-630 3807

Chapter Sixteen

Computing Terms Explained

More than any other field, computers abound with jargon and gobbledy-gook. But some of it is necessary if you are to understand and be understood. Here are some of the main terms you will come across in computing and word processing:

ASCII - American Standard Code for Information Interchange. The standard code by which computers communicate, in which each **Byte** means a certain letter or number (**Character**).

Basic - The most commonly used computer **language**.

Baud rate - The speed at which computers communicate. Roughly equal to **bits** per second. A typist types at about 100 baud. Most intercomputer communication happens at 1200 or 9600 baud.

Binary - The base-two numeric system used by computers. Everything in the memory, be it DATA or instructions or **text**, is represented by large numbers of binary digits (1 or 0, yes or no, off or on). See hex.

Bit - Short for BInary digiT.

Boot - The process of readying the computer to accept **programs**. This usually consists of **load**ing the **operating system** off a **disk**.

Buffer - An area of **memory** where information is temporarily stored, or "queued", for example, while it is waiting to go to a **printer**.

Byte - Eight **Bits**. A number between zero and 255.

Character - Any one of 128 different **ASCII** symbols, including letters, numbers, punctuation and mathematical signs.

Chip - **Microchip**, Integrated Circuit (**IC**).

Crash - General term used of failed **hardware** or **software**: to stop working or "go down".

Data - Any information, usually in numeric form.

Data Base - A **program** or series of programs that allow the computer user to access large amounts of information by type or class.

Decimal - see Hex

Disk - May be either "floppy" or "hard". For storage of **programs** and **data**. Floppy disks are inexpensive, removable and of a small capacity. Hard disks are more expensive, usually non-removable, and have a much larger capacity than floppies.

Disk Drive - The device that reads the disk, like the record player to the record.

File - Information, such as a document or a customer list, that is stored on **disk** and has a name.

GIGO (Garbage In, Garbage Out) - In other words, a computer is only as smart as the person programming or operating it, and seldom that.

Hard copy - What a **printer** prints.

Hardware - The physical machinery of the computer, "anything that you can touch", as opposed to **software**.

Hexadecimal (Hex) - Hex numbers are represented in base sixteen, rather than base ten or base two. Four binary digits (0 or 1) equals one hexadecimal digit (0 to 9 and A to F). Humans use base ten (decimal), we machine language programmers use base sixteen, (hex), and computers use base two (binary).

Kilobyte (K or KB) - 1,024 **Bytes**. Purists keep complaining that it should be a lower case k, not an upper case K, but K is the standard convention, and anyone who deviates might not be understood. Salesmen and those who wish to appear "in", or knowledgeable about computers keep using it to mean 1000, not 1024, but this is simply wrong. 1K is 1024. It is not 1000, though it is sometimes correct, depending on context, to use it to mean approximately one thousand.

Load - To fetch a **file** from **disk** and put it into **memory**.

Memory - Usually refers to the **RAM**.

Microprocessor - The main CHIP in a microcomputer, the "brain".

Microcomputer - A small one-person computer, centered around a microprocessor.

Modem - (Modulator-demodulator) a device that allows a computer to communicate with other computers over telephone lines.

Operating system (Sometimes **Disk operating system** or **DOS**) - The **Program** that control the flow of information, especially the flow of information between **disk** and **RAM**.

Peripheral - A device attached to the computer, e.g., **disk drive**, **printer**, **VDU**.

Program - A set of instructions written in a computer language such as **basic** that tells the computer what to do and the order in which to do it. Also a file containing these instructions. The programs name is usually the same as the files name.

RAM (Random Access Memory) - The dynamic core of a computer's memory. The contents can be changed by **programming** or loading different **programs** and **data**. The amount of RAM is the standard measure of the size of a computer. 64K is a very common size. (If you are told that a computer is 65K then you know the person speaking is deliberately using confusing jargon that he does not understand in order to impress you. Other standard sizes are 128K, 256K, 512K, 768K, and 1 gallon (1024K). It is preferable to avoid fractional sizes.

ROM (Read Only Memory) - Areas of the computer's memory that are pre-programmed by the manufacturer and cannot be altered.

SAVE - To store information from the computers memory to a file on disk. In particular to save a program as a file on the disk.

Software - The programs the computer uses. Disks are **hardware**, the **programs** on the disks are software. Hardware is a physical object, software is information embodied in the hardware that can enable the hardware to act in a useful and effective way. My brain is hardware and my mind is software. Hardware you can touch, software you cannot touch.

System - A generic all-purpose word used to cover any or all of the hardware or software, e.g., Debtor's system, disk system.

Text - Textual information, letters rather than numbers.

VDU (Video Display Unit, also Video Monitor) - A thing like a TV set, used so that you can see the computer's screen. A TV is a VDU if it is showing you a computer screen rather than a television show.

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